# WOMEN'S SELF-REPORT OF EXPERIENCES IN THE MENOPAUSE

by

Lisa F. Engleman

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# SUPERVISORY COMMITTEE APPROVAL

of a thesis submitted by

Lisa Fawn Engleman

This thesis has been read by each member of the following supervisory committee and by majority vote has been found to be satisfactory.

M. Tarmina

Iona Grosshans

THE UNIVERSITY OF UTAH GRADUATE SCHOOL

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I have read the thesis of Lisa F. Engleman in its final form and have found that (1) its format, citations, and bibliographic style are consistent and acceptable; (2) its illustrative materials including figures, tables, and charts are in place; and (3) the final manuscript is satisfactory to the Supervisory Committee and is ready for submission to the Graduate School.

Member, Supervisory Committee

Approved for the Major Department

Linda K. Amos

Chairman, Dean

Approved for the Graduate Council

ABSTRACT

This was a cross-sectional descriptive investigation designed to describe the symptoms reported by women in the perimenopausal transition. Seventy-eight women completed a 2-part questionnaire concerning their experiences with menopause. The first part contained an open-ended question asking the women to list symptoms that they attributed to menopause. The second portion contained a checklist of menopausal symptoms adapted from the Blatt Menopausal Index and was administered after the women had returned the open-ended section. Severity of symptoms was assessed on both portions of the questionnaire. Analysis of the open-ended questionnaires revealed 45 different symptoms. The 6 most frequently reported symptoms on the open-ended questionnaire were found on the checklist portion, as well. A significantly larger number of symptoms were reported on the checklist and women who used hormones or vasoactive drugs rated their symptoms as more severe. Demographic data and lifestyle characteristics were analyzed; however, it was found that lifestyle traits did not affect the women's perceptions of menopausal experiences.

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# CHAPTER I

# INTRODUCTION AND REVIEW OF LITERATURE

## Introduction

Menopause has been defined as a point in a woman's reproductive years when she ceases to have menstrual cycles. The onset of menopause is marked by changes in female hormones. These changes are often heralded by hot flashes or irregular periods, and some women report symptoms lasting from 1 to 10 years (Caldwell, 1982). Such changes precede and continue after the cessation of the last menstrual flow. During the transitional years, called the menopausal transition, many physiological adjustments are made in resposne to the declining amounts of gonadotrophic and/or gonadal (estrogen) hormones. Hence, the term perimenopausal transition has been suggested as a preferable term to explain the process of physiological change occurring in women (Greene, 1980; Pearson, 1980; Reitz, 1977; Voda, 1981).

Concurrent with these physiological changes, the women of this age group often experience lifestyle

changes. The changes may include increased responsibilities for the woman's parents (who are now elderly and may be in need of care) along with the maturation of the woman's children and their leaving home. Many authors feel that such events may also influence the impact of the perimenopausal transition (Milletti & Hawkins, 1983; Neugarten & Kraines, 1965; Pearson, 1982; Reitz, 1977).

The onset of the perimenopausal transition is reported to vary from age 40-55 (Ballinger, Cobbin, Krivanek & Saunders, 1979; Voda, 1984). This coincides with a documented "life change" of men. The spouse of the menopausal woman may or may not be experiencing a concurrent life crisis. If so, this could also have an impact on the perimenopausal change for the woman (Ballinger et al., 1979). Women without male partners also may be influenced by the changes in the lives of those around them, although there is no documentation for this.

The response to such biochemical, physiological and psychosocial adjustments is often noted by women in the form of unusual somatic, psychic and social symptoms. In addition to irregular or absent menstruation, other physiological symptoms have been identified. These include hot flashes, drying of vaginal mucosa, headaches, dizziness, lack of concentration, irritability, loss of libido, joint pains, apathy, lassitude, muscular weakness, and palpitations (Dewhurst, 1976). In spite of the

enumeration of a variety of symptoms many authors have continued to focus only on menstrual irregularities and the hot flash (Erlik, Meldrum & Judd, 1982; Pearson, 1982; Voda, 1984).

Questions remain unanswered regarding which body symptoms are a normal accompaniment of the menopausal adjustment period. This is due, in part, to a lack of knowledge regarding what women are experiencing during the perimenopausal transition. The questions asked most frequently by women who are experiencing menopause are:

> How long are my hot flashes going to last? How long do I need to use birth control? What kind is safest? Will I lose my mind? What is your opinion of "hormones?" How can I have a healthy menopause? What am I to do about uncomfortable intercourse? (Caldwell, 1982, pp. 1100-1101).

Historically, physicians have used their own experiences with women in nonresearch clinical settings as the criterion for treatment of other female patients during the menopause. The result has been confusion for women and the medical community alike (Pearson, 1982). Many researchers have addressed themselves to the lack of studies of symptoms of the perimenopause (Blatt, Weisbader & Kupperman, 1953; Delaplaine, Bottomy, Blatt, Weisbader & Kupperman, 1952; Kupperman, Blatt, Weisbader & Togashi, 1952). Different populations have been surveyed using a variety of instruments and research techniques. One of the noteworthy deficits among the menopausal research is the lack of studies of women who were drawn from non-

who experienced no symptoms of the perimenopause (Ballinger et al., 1979).

One of the first studies examined the menopause using the Blatt Menopausal Index (BMI). The BMI has become a standard in the field of menopausal studies and is often cited (Delaplaine et al., 1952). This index has been used, modified, changed, and reused as a "classical" measurement in most studies. The question arises, however: Is a listing of symptoms as used in the Blatt Menopausal Index or similar questionnaires an appropriate measure of the nonclinical, perimenopausal experience?

## Purpose of the Study

The purpose of this study was to investigate and describe the symptoms of the menopausal transition as experienced and reported by at least 50 women in a nonclinical setting who were in menopausal transition.

## Review of Literature

This section on review of the literature will include several major subject headings. These topics are: (a) terminology of menopause, (b) physiological changes of menopause, (c) symptoms of menopause, (d) specific factors which influence a woman's perception of menopausal symptoms, and (e) specific factors that relieve, postpone or mask menopausal changes. The latter two subject areas will be subdivided to address those specific factors

thought to influence perception and change the timing or symptoms of menopause.

## Terminology of the Menopause

One of the confusing elements of this transition period is the multiplicity of terms used. For example, menopause, menopausal transition, perimenopausal transition and climacteric are often used synonymously to describe this transitional period. Coope (1975) stated that menopause has been hard to define throughout modern history.

Neugarten and Kraines define menopause as "the cessation of menses" (1965, p. 66) and the climacterium as "the involution of the ovaries and the various processes associated with this involution including menopause" (Neugarten & Kraines, 1965, p. 266). Likewise, Seaman and Seaman (1977) state that menopause is the point where menses cease, and climacteric a period of time of approximately 15 years wherein a woman experiences widespread tissue changes. Greene (1980), however, uses the term climacterium to cover all the transition period including involution of the ovaries and both pathological and normal hormonal changes.

Other means have been used to describe this transition. For example, Gregory (1982) divides the process into three phases. The first phase is described as "premenopausal," the time when a woman experiences many

"premenopausal," the time when a woman experiences many anovulatory cycles, irregular menses with a decline of premordial follicles, a low sensitivity of the ovary follicle to gonadotrophins and decreased estrogen production in the ovaries. The second phase is menopause itself, described as the last menstrual flow, which is the direct result of too little circulating estrogen. The final phase, the postmenopausal period, is described as a cessation of menses with decrease in circulating estrogen, androstenedione, and testosterone.

Likewise, Greene (1980) identifies four phases of this change of life as the premenopausal, transitional, menopausal, and postmenopausal phases. Women having had menses regularly with no change in volume over the last year and having menstruated in the last 3 months are called premenopausal. Transitional women have had menses in the last 3 months, but report a change in regularity or volume during the preceding 12 months. Those women who had no menses in the last 3 to 12 months are identified as being menopausal. The group defined as postmenopausal have had no menstruation in the last 12 months.

Moaz and Durst (1980) and Erlik, Meldrum and Judd (1982) used the criterion of 6 months since the last menstrual period in order to define a woman as postmenopausal. Utian (1980) defined menopause as the last menstrual period and discussed the events of premenopausal

and perimenopausal hormone content. He also recognized various stages within the menopausal transition.

Groups of investigators have worked together to clarify the terminology of the menopause (Utian & Serr, 1976). The First International Congress on Menopause agreed that

> ...the climacteric is that phase in the aging process of women marking the transition from the reproductive stage of life to the nonreproductive stage (Utian & Serr, 1976, p. 1).

Menopause was defined by this group as the last menstrual period a woman experiences.

In 1981, the World Health Organization recognized the confusion in the medical literature regarding the utilization of multiple terms to describe the menopause. They agreed on the following:

> 1. That the term *menopause* be defined as the permanent cessation of menstruation resulting from loss of ovarian follicular activity;
>
> 2. That the term *perimenopause* or *climacteric* be used to include the period immediately prior to the menopause ... and at least the first year after the menopause;
>
> 3. That the *postmenopause* be defined as dating from the menopause, although it cannot be determined until after a period of 12 months of spontaneous amenorrhea has been observed ... premenopause ... to refer to the whole of the reproductive group prior to the menopause (WHO, 1981).

To summarize, a significant lack of consensus abounds in the research literature concerning the definition of terms surrounding the menopause. This situation often leaves

the reader confused as to the exact definition of the perimenopause used by specific authors. In this study, the author has used the definitions cited previously in this work as generated by the WHO (1981).

## Physiological Changes of the Menopause

The second area of confusion is related to the symptoms women experience at this time. Many authors note the wide variety of experiences women and their clinicians report occurring during the menopause. Reasons for these changes have been explained, in part, by the physiology of the menopause. The most widely accepted model of events of the perimenopausal period are explained within the scientific paradigm of hypothalamic/anterior pituitary/gonadal axis model (Lauritzen, 1975).

The two main physiological changes that have been found to occur in women during the perimenopause are first, lowered levels of estrogen, and second, an elevation of the serum gonadotrophins follicle-stimulating hormone (FSH) and the luteinizing hormone (LH) (Jones & Wentz, 1982). It has been found, however, that these levels fluctate widely during the perimenopausal period (Jones & Wentz, 1982). This fluctuation has also been noted by Sherman, West and Korenman (1976) in their studies of LH and FSH in menopausal women. Further obscuring the fluctuation of gonadotrophins is the ability

of the ovarian stroma cells and adrenal gland to produce androstenedione, which can be converted in "the skin and appendages to estrone" (Jones & Jones, 1981, p. 797). In essence, circulating levels of these hormones can vary greatly from woman to woman. In addition, the differences in symptoms women have reported during the perimenopausal period compound attempts to clarify the relationships between symptoms and physiological changes.

It is important to also consider those women who have entered the climacteric by other than the usual physiologic means and those who take hormone preparations to delay or modify symptoms of the perimenopause. Some women may have had surgical removal of the ovaries and uterus, or have had these organs rendered less effective or completely ineffective by radiation and/or chemical interventions. Women who take hormones also have altered experiences in the perimenopausal transition. It has been proposed that these groups of women experience the perimenopausal transition differently than those who enter the climacteric more gradually and "naturally" (Adena & Gallagher, 1982).

The perimenopausal transition is not influenced solely by physiological events, but is a complex process. Utian (1980, p. 106) states concisely that:

> While further clarification is necessary, the International classification does help clear up the confusion. The definitive statement is made that the varied symptom profile after menopause

> is caused by an interaction between three components:
>
> (1) decreased ovarian activity with altered hormone profiles;
> (2) social, cultural and environmental factors; and
> (3) psychological factors (Utian, 1980, p. 106).

Symptoms of the Menopause

Perhaps the work by Delaplaine et al. (1952) serves as the best example of the classical picture of the symptom complex of the menopause. The authors introduce a "menopausal index" to describe the typical symptomatology. In order to understand how this index originated and was later adapted, the work of Delaplaine et al. will be described in detail.

According to these authors, the index was a configuration of "the 11 most common complaints noted in the climacteric patient" (Delaplaine et al., 1952, p. 326). Apparently, the authors' combined clinical experience provided the baseline from which the 11 complaints of this index were chosen. It was reported that

> ...the menopausal index, while it is an arbitrary method of determining the severity of the patient's symptom complex, permits a statistical classification of the patient (Delaplaine et al., 1952, p. 326).

The population of the 1952 study consisted of women ages 26 to 51+, who were undergoing complete hysterectomies, including the removal of both ovaries. One group, used as controls, received routine care while the experi-

mental group received estradiol pellet implantation at the time of the surgery. Each group was evaluated by two means: vaginal smears for estrogenic effect and measurement by the "menopausal index."

The symptoms included in the index were: vasomotor changes, paresthesias, insomnia, weakness or fatigue, palpitations, arthralgias and myalgias, headaches, and formication (the feeling that insects are crawling over the skin). Each subject was asked to rate the severity of each symptom from none (0) to severe (3). A sum of scores for all 11 symptoms was recorded and an unknown computation was done to render a score for another scale. The reader was left in the dark as to the mathematical manipulation of the data, for the authors did not explain the details of that computation. However, a woman with a total score of 0 to 5 was rated as having "none" or no score on the menopausal index. A total score of 5 to 10 indicated a "mild" classification. Ten to 15 total points represented the "moderate" score on the index, while 15 and above was considered a "severe" rating.

It was concluded that the vaginal smears and the results of the menopausal index complemented each other and the index was "successfully used as a criterion of the severity of the menopausal syndrome" (Delaplaine et al., 1952, p. 332). Thus, the first trial of a menopausal index was completed. Two major assumptions of these

authors were that the vaginal tissue alone reflects the true severity of the perimenopause upon a woman, and that the computations, although not elaborated upon, were valid.

Again in 1952, many of the same authors (Kupperman et al., 1952, p. 365) reported the use of the same menopausal index linked with an amenorrhea index. This combination was used to evaluate the efficacy of hormone compounds for treatment of menopause. The authors noted that,

> ...the amenorrhea index (A.I.) represents the factor obtained by multiplying the extent of withdrawal (bleeding noted after progesterone therapy) by the quotient obtained by dividng the duration of bleeding by the time of onset of bleeding after a single intramuscular injection of 100 mg of progesterone to a patient previously primed by 3 weeks therapy with the estrogen to be evaluated (Kupperman et al., 1952, p. 365).

The computations or "conversion factors" of the menopausal index were also discussed. The authors weighed the symptoms of vasomotor changes, paresthesias, nervousness, and insomnia to give these factors major importance in the menopausal index. It was felt by the authors that the two indexes, menopausal and amenorrheal, complemented each other in the evaluation of the estrogenic compounds.

The following year, the authors explained how the symptoms in the checklist were weighted (Blatt et al., 1953). The severity factor reported by each woman for each symptom was multiplied by an arbitrary number assigned by the authors. In the case of the vasomotor

symptoms, the factor was 4. Parethesias, insomnias, and nervousness were given a factor of 2 (multiplied by severity rating). The other seven symptoms all had a factor of 1 (Blatt et al., 1953, p. 795).

This study also used the menopausal index to evaluate the efficiency of Vitamin E in relief of menopausal symptoms for a group of patients in a clinical setting. Vitamin E was evaluated, along with ethenyl estradiol, estrogenic substances (equine), phenobarbital, and a placebo. Vitamin E at the dosage of 50-100 mg a day was not found to be any more effective in reducing menopausal symptoms than a placebo.

Blatt et al. (1953) also commented on the validity of the menopausal index. They used two subjective scales to correlate with an objective measure, the vaginal smear. Because the measures gave equal results, the authors claim that each, including the menopausal index, are valid measures of a woman's experiences in the menopause.

One also notes an increase since 1960 in the use of both the menopausal index and a checklist of symptoms in the research literature. Neugarten and Kraines (1965) refer to the same 11 symptoms of the menopause as cited in the original article. These authors refer to the "Blatt Menopausal Index" as the menopausal index. Women in this study were drawn from the general community rather than from a clinical setting. Mothers of high school graduates

in the Chicago metropolitan area were first surveyed. Then, the study was expanded to include women of all ages (13 years upward). Neugarten and Kraines (1965, p. 267) noted,

> Accurate information regarding the incidence of symptoms among menopausal women is lacking, since women who do not seek medical attention are, for the most part, not included in clinical studies.

Neugarten and Kraines (1965) used a checklist of 28 symptoms, including the 11 cited in the BMI. The checklist was administered to the study population twice, and it was found that the 11 symptoms from the BMI differentiated the menopausal group from all other age groups. The significant finding was that the BMI would differentiate menopausal women from pre- or postmenopausal women.

In 1969, Jaszmann, Van Lith and Zaat published a study which also used the BMI on a nonclinical population. Over 1,000 women in the study were surveyed for menopausal complaints. It was found that the number of complaints rose during the premenopausal and menopausal time periods. There was a peak at the beginning of the postmenopausal period for symptoms of perspiration, tingling sensation of the arms and legs, and ache in bones, joints, and muscles. Similarly, the BMI scores among subjects were also found to peak at the beginning of the postmenopausal period and then gradually fell away.

This survey by Jaszmann et al. (1969) examined a number of factors found to influence a woman's perception of the menopause. The authors began by conducting an exhaustive search of the research literature which revealed that such factors as age at menarche, number of pregnancies, age at final pregnancy, financial income, level of education, marital status, and physical type -- light, normal and heavy -- all had bearing on a woman's view of the menopause. Then the authors attempted to validate these findings with their own research.

They (Jaszmann et al., 1969) divided their subjects into groups according to the phase of the menopausal transition they were currently experiencing. Each group (premenopausal, menopausal and postmenopausal) was rated according to the BMI. No significant differences emerged between women of different physical types. More menopausal complaints were reported, however, among women who had late menarche, women who had had at least one pregnancy, had been pregnant for the final time at the higher range of ages, were from the lower income group, had only a primary education, or had been married. It was found that these factors did not interact; each factor was significant only by itself. These findings were opposite to those which had been reported by previous researchers.

Researchers of other aspects of the menopause were also finding their results differed from earlier studies.

For example, a study of women in a clinical setting was conducted in Scotland (Thompson, Hart & Durno, 1973). Female patients of a general medical clinic were studied for the presence of the climacteric and hot flash. These symptoms included night sweats, sleeplessness, depression, headaches, dizzy spells, palpitations, tiredness, joint pains, bloatedness, backache, swollen ankles and general gynecological complaints -- specifically bleeding problems (Thompson et al., 1973). The decision to include these symptoms was based on a thorough review of the literature, combined with the author's private practice experiences.

These authors also compared those women who enter the menopause by "artificial" means (those women who had had radium, x-ray or hysterectomies -- with or without removal of the ovaries) with those women who enter the menopause "naturally" through nonintervention methods. They found that the "artificial" group had longer periods of hot flashes and a higher number of other symptoms than the natural menopause group.

Bungay, Vessey and McPherson (1980) studied a group of men and women to determine the incidence of menopausal symptoms in both groups. Care was taken that the term "menopausal" was not used in this nonclinical study. The symptom checklist included both those symptoms appearing in the BMI and those added by Neugarten and Kraines (1965). In addition, questions concerning problems with

sexual relations were added. Although the authors found clear evidence associating the hot flash with menopause, no other symptoms were found to be significantly associated with the menopausal state.

Sharma and Saxena (1981) developed a checklist, also based on the one compiled by Neugarten and Kraines (1965). Three subsets of questions dealt with hot flashes, other climacteric symptoms, and menopausal status. Women of Veranasi City, India between the ages of 40 and 55 were interviewed, using the checklist plus related questions. The authors found the perimenopausal period was more "distressful" for Indian women than for Western women.

Moore (1981) examined women in an African community using a symptom checklist. The occurrence of symptoms in the African community was similar to results in Western societies.

Frey (1981), in a study of women's symptoms using a checklist, found the most frequent symptom was feeling tired. In order of decreasing incidence were the symptoms of feeling blue or depressed, forgetfulness, headaches, and finally, feeling irritable and nervous. The "most worrisome symptoms" in descending order of importance were tired feelings, forgetfulness, feeling blue or depressed and weight gain. Frey also concluded that her

> ...subjects in general did not view the menopause through an illness-orientation. Thus, the problems occurring during the menopause could be interpreted as alterations in wellness, rather

than illness states (Frey, 1981, p. 35).

Also significant to this study was the finding that women who were employed reported fewer symptoms than those who were not.

In 1984, Walfisch, Antonovsky and Moaz conducted a study in North Africa using an interview technique in a clinical setting. Forty-seven women rated 15 symptoms. If they had experienced the symptom, they rated the symptoms as occurring with low, medium or high frequencies. They found that 50% of the women reported occurrence of some symptoms with 10 to 30% having sufficiently severe symptoms to necessitate a visit to the doctor. They found no differences among the premenopausal, menopausal and postmenopausal groups of the study, in relation to the severity or numbers of symptoms. They also investigated the women in the sample in relation to visits to the doctor and a self-assessed health status inventory. They found no relationships between these factors and the menopausal phase.

In conclusion, only three studies were taken from nonclinical populations. These were the Neugarten and Kraines study (1965), the study by Jaszmann et al. (1969) and the study by Bungay et al. (1980). The great majority of studies examined were conducted with clinical populations.

The original index (BMI) developed by Delaplaine and

associates (1952) has been reused and modified as a result of much research on menopause. All authors have attempted to explain the reasons for their own additions and/or deletions to the BMI. Checklist studies have been repeatedly used and have some degree of validity and reliability in separating menopausal from premenopausal women. This differentiation is the only consistent finding in all the studies reviewed.

## Factors Influencing A Woman's Perception of Menopausal Symptoms

Culture. Studies which used the symptoms checklist approach have also revealed other factors which influence a woman's perception of the perimenopausal transition. Culture, aging and sexism have been cited as factors that may modify or alter a woman's expectations and perceptions of the menopause. This section deals with these issues.

Moore (1981), Sharma and Saxena (1981), Flint (1979) and Flint and Garcia (1979) have suggested that the culture a woman lives in affects her perceptions of menopausal symptoms. The direction of the influence is unclear. For example, Flint (1979) found that 483 women of the Rajput caste in India had fewer menopausal complaints than Western women. She attributed this to the fact that at menopause, an Indian woman gains status by being allowed to leave the previously-enforced seclusion from men. On the other hand, Sharma and Saxena (1981)

also studied women in India. They reported that women had a more "distressful time" in the perimenopausal period than did Western women.

Flint and Garcia (1979), studying Jewish and Cuban women, found very clear differences between the two cultures. A questionnaire was used that focused on six areas: (a) personal information -- self-image and attitudes toward the climacteric; (b) a symptom checklist adapted from Neugarten and Kraines (1965); (c) 5 questions concerned with women's visits to physicians during the perimenopausal period; (d) questions regarding sexual behavior before and after the climacteric; (e) questions about attitudes concerning sex in general, and (f) personal sexual feelings. Flint and Garcia (1979) claimed that they could correctly predict to which group a subject belonged if they knew the answers to these questions.

Kay, Voda, Olivas, Rios and Imle (1982) found that while both groups reported having hot flashes, Anglo- and Mexican-American women differed in their perceptions of the hot flash. Anglo-American women had negative connotations of the hot flash, while Mexican-American women did not.

Davis (1982) studied women in a Newfoundland village whom she found had a very negative attitude toward menopause. She reported, however, that the same symptoms of menopause were present in this isolated culture as in

Western society. Neri, Bider, Ovadia and Ovadia (1982) found significant differences of experiences and perceptions of menopause among five ethnic groups in Israel.

Many authors report that culture is a significant factor in a woman's perimenopausal experience. However, the nature of the differences documented in differing cultures has not been precisely defined.

Aging and sexism. Van Keep and Kellerhals (1972) introduced a different concept of aging in women suggesting that women be classified not by chronological age solely, but by a combination of chronological age, social age, and menstrual age. It was felt that all these factors combine to give the woman a perception of her aging.

Flint (1982) called attention to the preoccupation of women in the 40 to 60 age group with all facets of aging. She stated that the climacteric is just a part of the general concerns women face as they age. With declining energy, increased financial and social problems, and difficulty entering the work force at this age, the symptoms woman may experience are perhaps magnified more than they would be without these complicating factors. She cited the new value of independence for women in the United States as a possible contributor to the uncertainty women of this age often encounter. In this country, many of the now perimenopausal women have exclusively tended

hearth, home, and children for the majority of their adult lives (Flint, 1982, p. 179). Becoming independent is not easily accomplished by all women in this group.

Alington-Mackinnon and Troll (1981) note,

> One assumption generally characteristic of attitudes toward aging is that all age-related changes are, by definition, degenerative. That is, regardless of their possible value in terms of species survival, they are maladaptive in terms of the individual. Like other age-dependent changes in adulthood, the menopause is perceived as a symptom of bodily decline, it is abhorred for that which it symbolizes as much as for it's own sake ... Rather, the menopause is widely perceived as the beginning of the end (p. 349).

Thus, one's perception of the menopause may be greatly influenced by the woman's feelings about aging, in general.

Feminist writer Rosetta Reitz states that the climacteric for her had more to do with her financial concerns and her resolve to be more independent than with her ovaries. Much of the same information is mirrored in Our Bodies, Ourselves (Boston Women's Health Book Collective, 1976). Moss (1970) asserts that aging and sexism in America combine against the maturing women to make her useless in society. The climacteric, she stated, is only a small piece of this.

One of the most thought-provoking views was provided by Posner (1979). The author traces the history of the medical model of the menopause and compares it with the feminist model of menopause. Posner states that the

medical model conceptualizes the menopause as a deficiency disease complicated by "psychological factors." Stated differently, some symptoms may be completely psychological in nature, with some authors arguing that those women who were and are more "stable" (i.e., well-adjusted, married, without evidence of mental illness, etc.) will have fewer symptoms (Dewhurst, 1976, p. 542).

The feminist model asserts that much of the experience of menopause may be attributed to what a woman believes, rather than to physiological events in her body. Hence, both the medical and the feminist groups reach their conclusions via different routes. Specifically, both conclude that nonbiological events exert much control over a woman's experience in menopause. It remains to be seen what future investigators will conclude because the present models reflect personal views rather than research efforts to distinguish between feminist models and other perceptions.

## Factors that Relieve, Postpone or Mask Menopausal Changes

Estrogen replacement theory. Both the feminist and medical communities have written extensively on the advisability of estrogen replacement to relieve discomforts and prevent tissue changes that take place during the climacteric. There are many protocols and arguments for and against the use of estrogens, alone or in combina-

tion with other hormones. Those arguments do not directly apply to this study; therefore, a detailed account of them will not be given. It must be noted, however, that it is widely agreed that the use of compounds containing estrogen, progesterone, other steroid hormones, and vasoactive drugs do mask, alleviate, or postpone symptoms of the menopause (American Council on Science and Health, 1983; Barr, 1975; Callantine, Martin, Bolding, Warner & Greaney, 1975; Dewhurst, 1976; Lightman & Jacobs, 1979; Coope, Williams & Patterson, 1978; Tulandi, Kinch, Guyda, Mazella & Lal, 1984). When women in the menopause are included in research studies, it is necessary to determine their hormonal status -- whether they are taking these chemicals or hormones or not. Failure to do so could distort the results of any project.

Lifestyle traits. In her milestone book published in 1977, Reitz listed many lifestyle changes that have been reported to relieve various symptoms of menopause. These are also mentioned in works by other authors (Getchell, 1979; Greenwood, 1984; Porcino, 1983; Voda, 1984). Exercise, reaching orgasm regularly, good nutrition and careful selection of health care provider are the major suggested modalities. These suggestions are the result of the authors' personal and clinical experiences, rather than the result of research studies.

Exercise. Exercise, Reitz states, is necessary for

life and should be done daily at this period of a woman's life. She recommends walking (Reitz, 1977). Porcino (1983) states that "vigorous exercise -- daily or several times a week -- is essential to growing old gracefully and zestfully" (Porcino, 1983, p. 199). Voda (1984) also notes exercise to be of benefit to this population, particularly to help maintain healthy bones.

Other benefits of exercise include decreased risk of cardiovascular disease, less insomnia and a decrease in the occurrence of depression and anxiety (Porcino, 1983). Greenwood (1984) reiterates these points and also notes regular exercise will improve one's appearance.

A recommended exercise program for the older adult is 30 minutes of exercise four times per week as a minimum. A heart rate of 130 to 140 beats per minute should be sustained over the 30-minute time period provided the woman is medically healthy (after consultation with and approval of a health care provider) (Getchell, 1979).

Sexuality. Disturbances in sexuality of the woman in the menopausal transition have been cited by many authors (Coope, 1984; Jones & Jones, 1981; Moaz & Durst, 1980; Porcino, 1983; Reitz, 1977; Semmens & Semmens, 1984; Utian & Serr, 1976; Voda, 1984). Most report that atrophic vaginitis often occurs during this period due to decreased amounts of circulating estrogens and is a major cause of these disturbances. Less estrogenic influence on the

vagina may leave the vaginal tissues thinner and more friable -- more easily damaged -- during intercourse. This, in turn, leads to painful intercourse. It is of interest that this does not occur in all menopausal women (Jones & Jones, 1981).

Semmens and Semmens (1984) discussed their study in which decreased vaginal secretions were studied in relationship to circulating estrogen and supplemental estrogen. These authors felt that as secretions were decreased, the negative effects these women experienced in relation to their sexuality were increased. Their study provides new information on the use of estrogen in the climacteric years.

Researchers have addressed ways in which these negative effects have been, or can be, modified. Some believe that if a woman reaches orgasm regularly, by whatever means, atrophic vaginitis or painful vagina may be postponed (Porcino, 1983; Reitz, 1977). Mastroianni (1985) reports that women who are sexually active are 10 kilograms heavier than those who are not. He maintains that the extra adipose tissue is involved in estrogen storage and may assist in making the climacteric transition less stressful.

Reitz (1977), Voda (1984), and Coope (1984) have described some physiological changes that occur in both men and women at this time that may account for changes in

sexuality. They cite age-related changes in lifestyle, as well as those changes peculiar to women (i.e., hormone changes). All three suggest practical strategies for modifying these changes that range from exercise to using a lubricant, to the use of supplemental hormones. These authors suggest that the field of sexuality in the menopausal woman will be an important avenue of future research.

Lastly, Coope (1984) details many problems encountered in the later years that have an impact on sexuality. She discusses many different means of modifying problem areas, but cites no research findings to substantiate her claims.

Nutrition. Proper nutrition, or lack of it, affects everyone's lives. Women in the perimenopausal transition are no exception. For example, because of decreased amounts of circulating estrogens, it becomes imperative that women in the perimenopausal transition take special care to include sufficient calcium in their diets. Women at this time become more prone to osteoporosis, especially if sufficient amounts of calcium are not present in their diets. It is recommended that women include at least 800 to 1500 milligrams of calcium in their diets daily. This, combined with regular weight bearing exercise, is thought to decrease a woman's chance of developing osteoporosis (Eagles & Randall, 1980; Greenwood, 1984; Voda, 1984).

Other nutritional needs do not differ from those of most women after the growth spurt of adolescence. Women aged 23 to 75 need about 44 g of protein each day (Eagles & Randall, 1980). There are no RDA requirements for fat or protein. It has been reported that 45 to 50% of the American diet is composed of carbohydrates, both complex and simple (Mitchell, Rynbergen, Anderson, & Dibble, 1968). The American Heart Association recommends that the combined content of unsaturated and saturated fatty acids in the diet should not exceed 35% of the entire caloric intake. There have been no reported differences in this age group of women for other vitamins, minerals or trace elements.

Reitz (1977) argues that a woman who maintains a healthy diet will have fewer problems during menopause than one who neglects her nutritional needs. This argument is not based on scientific research findings. Mastroianni (1985) stated that nutrition and age-related changes are very important in relation to the climacteric but need further research.

Health care provider. Porcino (1983), Reitz (1977) and Voda (1984) recommend that a woman passing through the perimenopausal transition should consult with a health care provider and cite the importance of using care in choosing a provider. Specifically, Voda (1984) suggests a nurse practitioner or physician who is knowledgeable in

the field and will take the time to listen to each woman before recommending treatment.

An interesting study by Holzman, Ravitch, Metheny, Rothert, Holmes and Hoppe (1984) found disparity between what a physician's stated beliefs about estrogen were, and their likelihood to prescribe estrogen after reading case histories. Their stated beliefs did not correlate with their hypothetical answers to case presentations. In view of these findings, women in this period should give careful consideration to selection of their health care providers.

In summary, there are factors other than physiological change that may influence a woman's experiences with menopause. Research in the area of modifying factors is limited. It is necessary to account for these potential contributing factors, however, when studying the menopausal experience in order to understand why similarities and differences between women occur.

## Summary

Many studies of menopause have been conducted using a symptom checklist based on the the BMI. Some researchers combine an index developed by Neugarten and Kraines (1965) from the BMI with a checklist of symptoms observed in clinical practice. The majority of studies used the symptoms included in the BMI. The BMI, by the original authors' admission, was an arbitrary list of symptoms.

This investigator questions whether the 11 symptoms of the BMI do, in fact, represent women's experiences.

Many of the studies are incomplete for several reasons. In some studies, the populations were women who presented to clinicians complaining of menopausal symptoms. Women who had no complaints, or those who did not seek medical care for menopausal complaints were not included in all studies. Further, there is much controversy over the cultural biases of some studies. Actual populations of the studies have been criticized for these reasons.

An important criticism is the utilization of checklists at all. Donovan and Rochester (1951) seriously questioned the use of checklists because they felt the lists suggested symptoms to women that they might not have complained of if unprompted. They felt that subjects may have agreed they had such symptoms in order to receive care and attention. When they interviewed women repeatedly, they found the symptoms changed from week to week. When they gave the women no reinforcement for their symptoms (by not giving attention to them), the women returned the next week with differing symptoms. This occurred even while carefully maintaining a caring and sympathetic attitude toward the women. Donovan and Rochester suggested a complex interaction existed between health care provider and patient.

These problems led this author to develop a descriptive study in an effort to avoid many of these drawbacks. Although a checklist was used, Donovan and Rochester's (1951) criticism may be applicable to this study also. However, most of the other factors they criticized were avoided. The primary purpose of the study was to determine what symptoms of the menopause women in a nonclinical setting were experiencing. A second component of the study was a determination of those factors which relieve or moderate menopausal symptoms.

## Conceptual Framework

Menopause, or more specifically, the perimenopausal transition, is a complex process involving psychological, physiological, developmental and cultural issues. Researchers have traditionally used models, frameworks or theories to organize such complex issues in order to understand the relationships among the many variables. During the review of literature, no specific theory or model explaining the phenomena was universally proposed. Rather, the literature suggests many theories to account for various aspects of women's experiences in the menopause.

The most comprehensive approach was presented by two registered nurses, Millette and Hawkins (1983). They propose that many factors influence a woman's experience in the menopause. These can best be understood by

reviewing the model presented in Figure 1.

Millette and Hawkins (1983) discussed the physiological events of menopause, such as the decline in circulating estrogen, the involution of the ovaries, and the differences experienced between surgical menopause and gradual menopause and emphasized the very individual experiences women have during this period. These events are compared with the changes that women experience in and around menarche, and the authors stated that the two events, menarche and menopause, were but milestones in women's lives.

Millette and Hawkins (1983) also discussed the confusion that exists between symptoms of aging experienced by both men and women and symptoms of physiological events of menopause. They assert that there is some confusion among both men and women into which category (aging versus menopause) the various symptoms belong.

Many psychologists, Duvall (1971), Erikson (1963), Havighurst (1972), and Peck (1968) have discussed the developmental tasks attributed to the middle years. Millette and Hawkins (1983) state that many of the developmental theories are based on the male model, and may not be applicable to women. Further, they agree that such models need modification to account for women's changing status in today's culture. All developmentalists

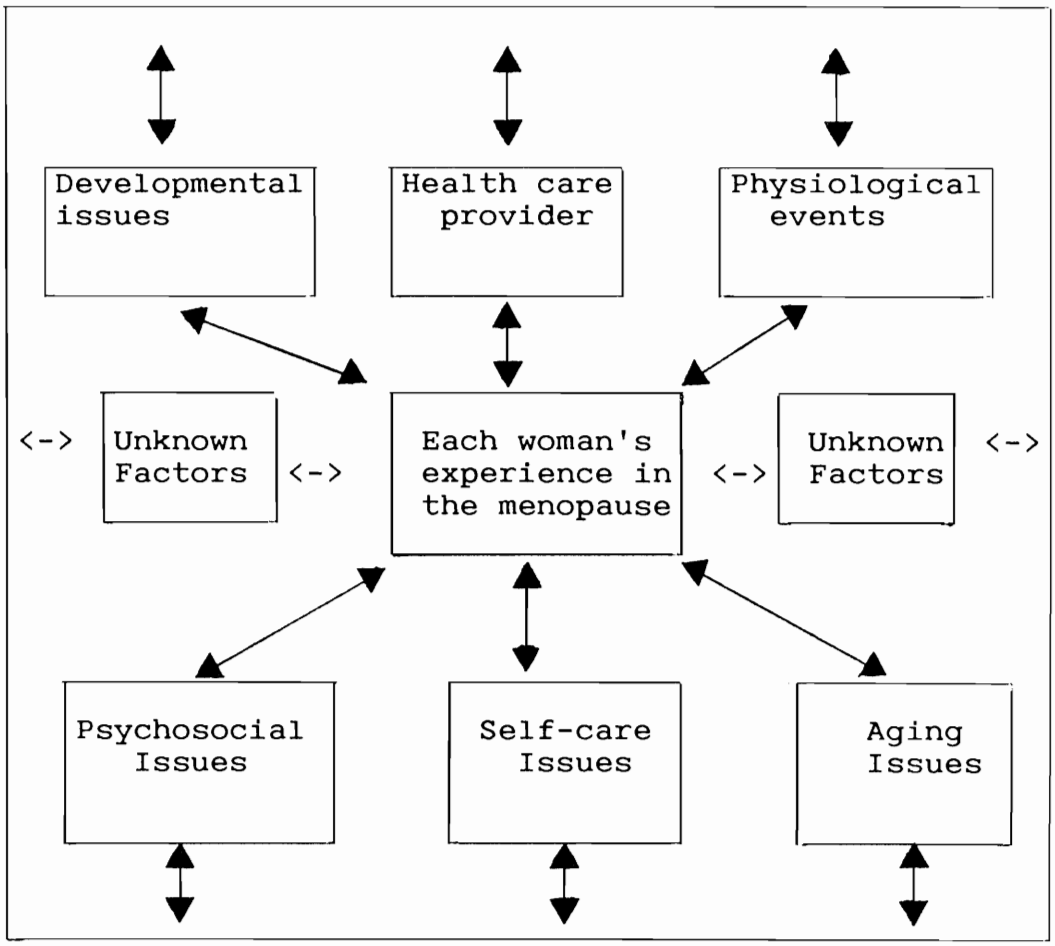



Figure 1. Factors influencing a woman's experience in the menopause (Adapted from Millette & Hawkins, 1983).

agree that the middle years are years of great change and each theorist specifies developmental tasks for women of this age. Whether a woman completes these specified tasks or not supposedly has a marked impact on her life.

The psychosocial issues that Millette and Hawkins (1983) refer to are those that the American culture imposes on its aging women. The emphasis on youth, the high value of a woman's reproductive ability, society's tendency to judge a man by his financial success and a woman on her looks, as well as a cultural heritage that depicts the menopausal woman as barren and empty, are all factors which combine to cause American women to view menopause in a negative way. The women's movement has had some positive impact on this negative outlook, but it is felt that these issues are still valid today.

Self-care habits also affect the perimenopausal transition, as does the health care provider one chooses to consult. These two factors influence each other, as well as all other factors in the model. The symptoms may be tolerated well in a healthy, robust woman, but may be very debilitating in a woman with failing health. Emphasis of a health care provider on positive health habits versus indiscriminate use of hormones could probably also have an impact on a woman's experiences.

All of these factors influence each other individually and collectively, with still unknown or undis-

covered factors yet to be added. This is shown in the model by the arrows which point from each factor to the others. The perimenopausal transition is the result of many factors combined. With this model as a framework, a questionnaire was compiled to investigate women's experience in the menopausal transition (Appendix B).

## Problem Statement

This study was formulated to address the situation of women who were experiencing the perimenopausal transition. The major goal was to allow women in a nonclinical setting to describe their experiences of this transition.

## Research Questions

Ten research questions were developed to further define the parameters of this phenomenon. These were:

1. What symptoms of the menopause will women in a nonclinical population report most often? Will those women report the same number and kind of symptoms of the menopause in answer to an open ended versus a checklist questionnaire?

2. Will women who take hormones or vasoactive drugs and those who do not report the same number and kind of menopausal symptoms.

3. Will women who are premenopausal, menopausal, and postmenopausal, report the same number and kind of menopausal symptoms?

4. Will women who list the same symptoms(s) in the open-ended questionnaire and the checklist questionnaire rate the severity of the symptom(s) equally?

5. How many women have talked with their health care provider about menopause?

6. What percentage of women who consider themselves in the periperimenopausal transition are taking hormone preparations or vasoactive drugs?

7. What percentage of symptoms reported on the questionnaire will women report were also experienced before the perimenopausal transition?

8. How much will women state the perimenopausal transition has affected their daily lives?

9. Will women who have certain demographic or lifestyle traits have less severe symptoms than women without those traits?

10. What will be the reason(s) given by women that tell them they are in the perimenopausal transition?

## Assumptions and Limitations

### Assumptions

Certain assumptions and limitations are specific to the type of design used in this study. Five assumptions are applicable to this research.

1. Menopause is limited by definition to women.

2. All women (with few exceptions) menstruate, and pass through a menstrual transition, reproductive period, perimenopausal transition, and menopause.

3. More information from women experiencing the perimenopausal transition is needed by health practitioners in order to provide better care.

4. Women experiencing the perimenopausal transition are the best source of information about this life period.

5. Women will volunteer to participate in a study to further knowledge of perimenopausal transition and will be able to factually report the symptoms they experience.

Limitations

The limitations of the study are based primarily on the type of research design used. These areas are especially critical for interpetation of the data. First, because the questions in the study required recall of information, the study was likely to evidence some errors resulting from the inability of the subjects to accurately relate past information.

Second, the results are not generalizable to the entire population of women in the perimenopausal transition because of nonrandomization and use of a small convenience sample. Finally, some error of reporting may result because of misrepresentation of subjective data

contributed by each respondent. In addition, the fact that each woman was free to interpret questions may have led to misunderstandings of the questions.

## Rationale and Significance of the Study

Nurse clinicians, like their medical counterparts, are concerned with the detection, diagnosis, and curative aspects of treating pathological states in their clients. Nursing theory and education also highlight the psychosocial aspects of patient care management. Preventive health measures, health education, and anticipatory guidance have long been considered essential to the practice of nursing. The nurse clinician must tailor interventions to the individual, focusing on health promotion as well as control of symptoms.

The situation in which a woman entering the perimenopausal transition finds herself may not fit exactly with any particular theory or intervention. The nurse clinician, after careful review of the literature of the perimenopausal transition and the unique situations in this period of the client's life, must base the management plan on some theoretical belief about menopause. This theory needs to reflect the complexity of changes that are taking place during this time.

The review of literature and conceptual framework have highlighted current thought on the complexity of the

perimenopausal period. Even primary definitions of the terms currently used to describe the perimenopausal period are often confusing and contradictory. Studies have often been based on small clinical populations of various cultural groups. The need for studies of varied groups, nonclinical populations, and various cultures has been documented.

In order for nurses to assist perimenopausal women, the nurse clinician's plan must be based in solid theory that incorporates all the factors involved in the process. A need for more knowledge of all women, with and without perimenopausal symptoms, is needed in order to establish the first level of theory (i.e., to describe the phenomena). This study will add to the body of knowledge concerning menopause, and together with other projects, assist in developing a clearer description of the woman in the perimenopausal transition. A logical and concise description of these phenomena will have a positive influence on women's health care.

# CHAPTER II

# DESIGN OF THE STUDY

## Design

This was a descriptive study utilizing a survey of women volunteers. Women were recruited to answer a questionnaire dealing with their experiences during the menopause (Appendix B). A convenience sample consisted of volunteers aged 37 to 72, who answered the newspaper and/or other media advertisements, or were contacted through their women's club or group.

## Setting

A letter describing the study was sent to all women's clubs meeting in the target area who were listed on the "Idaho Women's Groups Information and Referral List 9/1982." A meeting with the women's group was scheduled via follow-up phone calls 1 week after the letter was sent. Church, school, and community groups were also contacted by phone to determine: (a) potential interest in this study, and (b) that a signficiant number of the members were in the target age group of 40 to 55 inclusively. The same letter describing the study sent to the

women's clubs was also sent as a follow-up to those church, school, and community groups from whom positive phone responses were obtained.

## Population

The target pouplation for this study was all women between the ages of 40 and 55 inclusive who resided in the greater metropolitan area of Boise, Idaho (located in Ada County, Idaho). After data collection, the age range was expanded, due to too few respondents who fit the 40 to 55 age group. The new age range included all women who stated they were in the menopause and ranged from 37 to 72 years of age.

It was determined by the 1980 United States Census Report that in this area, women between the ages of 36 and 74 (inclusive) numbered 23,466 (Bureau of the Census, 1980). Less than 0.3% of this female pouplation is black and less than 2% claim Spanish origin. No other significant racial, ethnic, or cultural groups were listed.

## Sample

Volunteers were obtained across a wide range of women's clubs and community, school, and church groups in the target area. Groups who stated they had a significant number of members whose ages fell between 40 and 55 inclusive and who wished to participate in the project during the data collection period were included in the

study. Women who contacted the investigator individually were invited to a group meeting. For the purposes of this project, all women present during each meeting filled out a questionnaire regardless of age. Only those women who stated they were in the menopause or "change of life," were included in the study. Data from questionnaires of women not meeting the above criteria were not used in this study. It was the opinion of the investigator that screening the group prior to administration of the tool would have been unwise for at least two reasons:

1. Isolating the age groups would have been difficult due to the variety of settings;

2. Women who did not meet the criteria but showed interest in the project may have benefitted from filling out the questionnaire.

Data were collected from 205 women over a period of 3 1/2 months. After this time period, the data collection was discontinued. The final sample for data analysis consisted of 78 women who stated they were in the menopause and completed the questionnaire.

## Operational Definitions

The following operational definitions were used to clarify the research questions.

Menopause

Menopause is that point in time when a woman no longer has menstruation; it is, in fact, the last menstrual period. This point is reached by failure of the ovaries.

Perimenopausal Transition

The term, perimenopausal transition, is used to include a period of time prior to the menopause (from months to years) when a woman begins to have changes in her menses (or other events that can be directly related to ovarian failure) and at least the first year after the menopause.

Premenopause

Premenopause is defined as the period in a woman's life from menarche to menopause.

Postmenopause

Postmenopause is the period of time in a woman's life from menopause to death.

Symptom

A sign, indication or feeling of change that is observed by a person, especially if it indicates disease or altered health is considered a symptom.

Sex Hormone

A sex hormone is any substance (natural or synthetic) that is carried by the bloodstream and has a physiological effect on any of the reproductive organs of the body.

Vasoactive Preparations

Vasoactive preparations are drugs that affect the vasculature of the body causing dilation or constriction of the blood vessels either as a direct/desired effect or a side effect. These drugs include: all hormone preparations, cafergot, tenormin, wigraine, propanolol and lopressor.

Lifestyle Trait

A characteristic or habit that one may choose is considered a lifestyle trait. For this study, these include exercise, amount of calcium, protein and fat in the diet, calorie intake, seeing a health care provider and talking with someone about menopause, being sexually active and using hormones or vasoactive drugs.

Health Care Provider

The term health care provider is defined as any person from whom advice may be obtained on a formal basis concerning one's physical or mental well-being.

Perimenopausal Group

In this investigation, the perimenopausal group was comprised of all women who stated they were in the menopause. These included members of the following groups: premenopausal, menopausal, postmenopausal, users of hormone preparations or vasoactive drugs and those who did not take hormones or vasoactive drugs.

Hormone/Vasoactive Drug Users (Group H1)

All women (premenopausal, menopausal or postmenopausal) who claimed to be menopausal and stated they had used an estrogen, progesterone, or other vasoactive hormone drug(s) within the past 5 years were considered members of the hormone/vasoactive drug users group.

Nonhormone/Vasoactive Drug Users (Group H2)

All women who stated that they had used no hormones or vasoactive drug(s) within the past 5 years were included in the nonhormone/vasoactive drug users group.

Premenopausal Group (Group M1)

All women who had a menstrual period within 1 year of answering the questionnaire were considered premenopausal.

Menopausal Group
(Group M2)

Women whose last period was at least 1 year previous, but not more than 2 years prior to answering the questionnaire were defined as menopausal.

Postmenopausal Group
(Group M3)

Women who reported that their last menstrual period was over 2 years previous and stated they were still in the perimenopausal transition were included in the postmenopausal group.

Nonclinical Population

Any group of participants that are not taken from a listing of patients in an institution or medical practice were considered nonclinical.

## Data Collection

Data were collected in the Boise, Idaho area. Sample groups were obtained as described in a previous section. Group members and other individuals who asked to participate in the study were invited to call or write such response to the investigator. A meeting time and place were arranged that was acceptable to both investigator and host group.

At these meetings, a short explanation of the project was given which included the following:

1. Introducton of investigator;

2. Explanation of investigator's interest in menopause;

3. Use of data to be collected to explain the body of knowledge of menopause;

4. Confidentiality of the data;

5. Subject consent forms -- explained, signed, and collected;

6. Proposed order of events:

6.1 Part I distributed and answered individually by the women, then collected;

6.2 Part II distributed and answered individually by the women, then collected;

6.3 Questions from the group;

6.4 Presentation if applicable;

7. Presentation included:

7.1 Review of literature regarding menopause;

7.2 Definition of terms (premenopausal; menopausal; last menstrual period [LMP]; postmenopausal);

7.3 Current therapies (particular attention was given to the presentation of these therapies to insure that they were presented in a nonjudgmental way):

7.3.1 estrogen,

7.3.2 estrogen and progesterone combinations,

7.3.3 others,

7.3.4 need for individual consultation with health care provider;

8. Thanked club and subjects and departed.

A major data collection error was discovered during the fifth week of data collection after approximately 75% of the subjects had answered the questionnaires. As the investigator was beginning preliminary coding, it was found that the last page of the questionnaire was missing. This was traced to the investigator who, when printing out the questionnaire from computer files, chose an earlier version of the file in error.

After consultation with the supervisory committee, the investigator elected to contact each study participant who met the criteria for inclusion in the study. The participants were then asked to answer the missing questions during a follow-up telephone interview. This was a time-consuming option as telephone numbers had not been included in the questionnaire. Illegible writing and telephone numbers listed under a spouse's name compounded the problem. This follow-up expanded the data collection period from 6 to 14 weeks. However, 76.9% of the missed sample population was eventually reached.

In conclusion, data collection was delayed and the design of the study modified because of a data collection error. Data collection consisted of administering a 2-

part questionnaire with a follow-up phone interview 7 to 28 days later. The nutritional data were not obtained for the entire group; 23.1% of the sample were not contacted. With this exception, the study was conducted as planned.

# CHAPTER III

# DATA ANALYSIS

This study was descriptive in nature with a limited volunteer sample group. The data obtained were nominal and ordinal in nature. Descriptive statistics were used to analyze the data. Nonparametric statistics were appropriate to the study and were, therefore, utilized. The data analysis is divided into two sections: (a) demographics, and (b) research questions.

## Demographics

The demographic data collected in this investigation were age, race, education and family income levels (Table 1). Comparative statistics (Bureau of the Census, 1980) for the Boise Greater Metropolitan Area (BGMA) were available for age, race, and educational levels. Only an average income of $19,604 for this age group was available from census records while more detailed information was obtained in this study. Each parameter is discussed separately.

Table 1

Sample Profile with Comparison to Population of Boise Greater Metropolitan Area[a]

| Variable | Parameter | Sample | Women in BGMA |
|---|---|---|---|
| Age | Years | 37-72 | 35-74 |
| Race | White | 91.0% | 97.0% |
| | Spanish-American | 1.3% | 2.0% |
| | Black | 1.3% | 0.3% |
| | Asian | 1.3% | 0.1% |
| | Native American | 5.1% | 0.1% |
| Educational Level | < high school | 2.6% | 35.7% |
| | High school graduate | 19.2% | 64.9%[b] |
| | 1-3 yrs college | 35.9% | 11.0% |
| | College graduate | 23.1% | 10.0% |
| | Graduate degree | 19.2% | -- |
| Income | Unknown | 15.4% | 0.0% |
| | < $10,000 | 6.4% | -- |
| | $10,000-19,999 | 12.8% | -- |
| | $20,000-29.999 | 16.7% | -- |
| | $30,000-39,999 | 20.5% | -- |
| | $40,000-49,999 | 11.5% | -- |
| | $50,000-59,999 | 5.1% | -- |
| | $60,000-69,999 | 6.4% | -- |
| | > $70,000 | 5.1% | -- |
| | Total Ave. Income | $30,000-39,999 | $19,604 |

Note. [a]Bureau of the Census, 1980; [b]High school graduates and above.

Age

Women in the study group ranged from 37 to 72 years of age. The mean age was 51, the median 50, and the mode 48, with a standard deviation of 7.147. The age range roughly compared to the 35 to 74 year age group from the census data (Table 1). This group of women span an age range of 39 years. Figure 2 presents a graphic representation of the age distribution of the study participants.

Race

There was greater representation of the "other than white" groups in the sample than found in the general population. Census records (Bureau of the Census, 1980) indicated a 3.0% "other than white" group in the general population. The sample group had a 9.0% "other than white" membership. The high percentage of 5.1% Native American representation is the most notable in the study group. Secondly, the lower percentage of Spanish American representation in the sample than in the census data was apparent.

Education

The sample population had a higher educational level than the general population as represented in Figure 3. Only 2.6% of the sample had less than a high school education, while 35.7% was reported in the census data

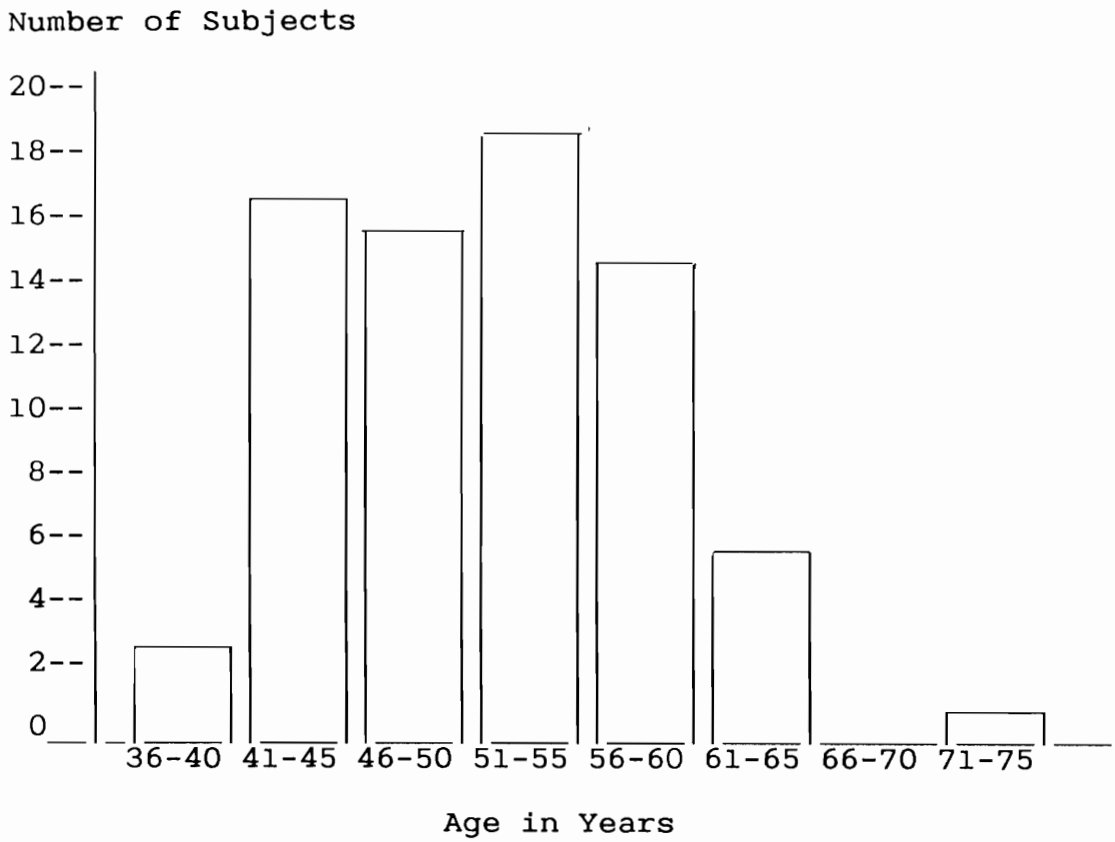



Figure 2. Age distribution of study group.

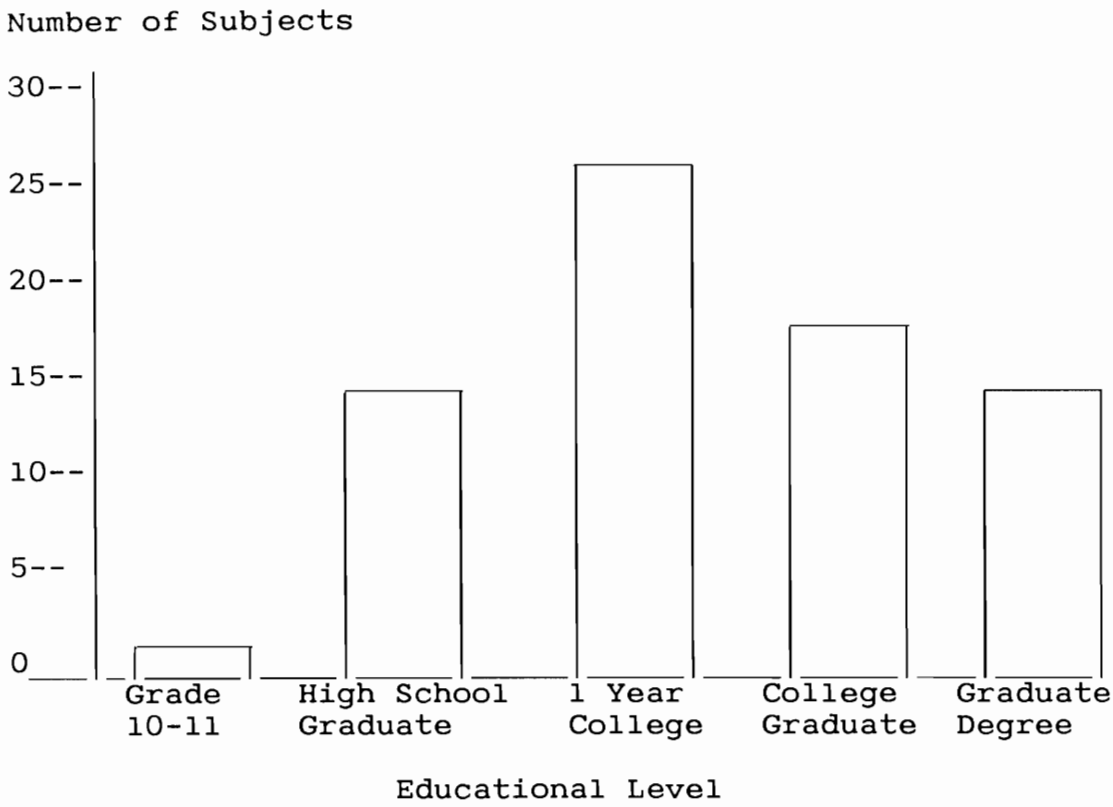



Figure 3. Educational level of study group.

(Bureau of the Census, 1980). It is difficult to compare the sample and the general population for those women who were high school graduates or above because the census data groups all high school graduates and college groups together, while this study provided more detailed categories. The tendency for the study group to have significantly higher education was, nevertheless, apparent. The mean, median and mode of the study group all fell within the 1 year of college category.

Income

The average family income level for the sample group fell within the $30,000 to $39,999 range as presented in Table 1. The mean, median and mode fell within this range, as well. This is considerably higher than the $19,606 average family income of the general population as reported by the U.S. Bureau of the Census (1980). Table 1 clearly indicates a difference between the sample population and the general population.

In conclusion, other than the similar age characteristics, the study population was different than the general population of the Boise Greater Metropolitan Area. Race, educational levels and income all differed markedly from the average presented in the census data (Bureau of the Census, 1980).

## Research Questions

This section of the data analysis will consider each research question individually. It should be noted that where appropriate, the sample has been divided into various subgroups according to the research questions. Those who used hormones and those who did not use hormone preparations are referred to as Groups H1 and H2, respectively. Those women who were premenopausal, menopausal and postmenopausal are referred to as M1, M2, and M3, respectively.

### Research Question One

Research question one stated:

> What symptoms of the menopause will women in a nonclinical population report most often? Will those women report the same number and kind of symptoms of menopause in answer to an open-ended versus a checklist questionnaire?

Table 2 presents an exhaustive list of all symptoms reported by women in this study. The list is not ranked, but contains all 45 symptoms reported in both the open-ended and checklist questionnaires. The 11 symptoms of the Blatt Menopausal Index (BMI) are noted with an asterisk in the table. These symptoms were reported in the open-ended portion of the questionnaire without prompting from the investigator.

As can be seen in Table 3, the hot flash was the most frequently reported symptom for both the open-ended section (53.8%, $n$ = 42) and for the checklist (87.2%, $n$ =

Table 2

All Symptoms Listed on the Open Ended Question

| Symptom | Symptom |
|---|---|
| Hot Flash* | Painful Vagina |
| Tingling, Numbness* | Growing Whiskers |
| Insomnia* | Anxiety, Stress |
| Nervousness* | Hair Changes |
| Melancholia, Depression* | Posture Decline |
| Vertigo* | No Periods |
| Muscle, Joint Pain* | Breast Discomfort |
| Headaches* | Blurred Vision |
| Heart Palpitations* | Water Retention |
| Weakness, Fatigue* | Yeast Infections |
| Skin Changes* | Pain |
| Mood Changes | Vaginal Discharge |
| Weight Changes | Anger |
| Changes in Menses | Cramps |
| No Longer Constipated | Premenstrual Frustration |
| Dizziness | Swelling of Legs |
| Mental Confusion | Stomach, Bowel Changes |
| Memory Lapse | Lower Blood Sugar |
| Cold | Lower Social Status |
| Irritability | Change in Metabolism |
| Sexual Appetite Decreased | |

Note. *Indicates those symptoms found also on the checklist questionnaire (BMI).

Table 3

Most Frequently Reported Symptoms

(n = 78)

| Symptom | Open-Ended Total | Open-Ended % | Checklist Total | Checklist % | Combined Total | Combined %[a] |
|---|---|---|---|---|---|---|
| Hot Flash | 42 | 53.8 | 68 | 87.2 | 68 | 87.2 |
| Changes in Menses[b] | 34 | 43.6 | -- | -- | 34 | 43.6 |
| Melancholia, Depression | 22 | 28.2 | 64 | 82.0 | 64 | 82.0 |
| Weakness, Fatigue | 15 | 19.2 | 60 | 76.9 | 60 | 76.9 |
| Nervousness | 14 | 17.9 | 60 | 76.9 | 62 | 79.5 |
| Skin Changes | 13 | 16.7 | 58 | 74.4 | 59 | 75.6 |
| Insomnia | 9 | 11.5 | 64 | 82.0 | 64 | 82.0 |
| Muscle, Joint Pain | 9 | 11.5 | 62 | 79.5 | 64 | 82.0 |
| Headaches | 9 | 11.5 | 62 | 79.5 | 62 | 79.5 |
| Weight Change[b] | 9 | 11.5 | -- | --- | 9 | 11.5 |
| Heart Palpitations | 7 | 9.0 | 57 | 73.1 | 57 | 73.1 |
| Tingling | 4 | 5.0 | 53 | 67.9 | 53 | 67.9 |
| Vertigo | 1 | 1.3 | 51 | 65.4 | 51 | 65.4 |

Note. [a] Duplications in open-ended questions and checklist have been removed; [b] These symptoms are not included in the BMI.

64). Overall, 87.2% of the women reported the hot flash in at least one of the sections. Melancholia and depression, insomnia, and muscle and joint pain were equally reported by the sample (82.0%, n =64). Nervousness and headaches were the third most frequent, with 79.5% (n = 62) of the respondents reporting their presence. Two symptoms, changes in menses and weight change which were not included in the checklist, were included in the table because their incidence compared with other symptoms listed in the open-ended cases.

The answers received in the open-ended portion of the questionnaire differed from the checklist responses. In the open-ended section, hot flashes were the most frequently reported symptom with 53.8% (n = 42) of the women reporting them. Changes in menses was the second, reported by 43.6% (n = 34) of the women. A majority of the respondents described melancholia and depression, weakness and fatigue, nervousness, and skin changes. The other symptoms included in Table 3 under open-ended cases were included solely for purposes of comparison with the checklist symptoms as their frequencies were less than 15%.

Although hot flashes were the most frequently reported symptoms on the checklist (n = 68, 87.2%), insomnia and melancholia and depression were also frequently noted (n = 64, 82%). It is noteworthy that all

symptoms in the checklist had at least 65.4% (n = 51) of the sample answering positively. On the other hand, the hot flash, the most frequent symptom listed in the open-ended section was reported by only 53.8% (n = 42) of the respondents. It is of interest that in responding to the open-ended questionnaire, women listed the first 6 symptoms of the checklist most frequently without coaching from the investigator. Only one of these symptoms, changes in menses, was not included in the checklist.

## Research Question Two

Research question two stated:

> Will women who take hormones or vasoactive drugs and those who do not report the same number and kind of menopausal symptoms?

These data were divided into women who used hormones or vasoactive drugs (H1) and those who did not (H2). According to the review of literature, the use of hormones and vasoactive drugs relieves or modifies the symptoms of the perimenopausal transition. Table 4 presents the symptom responses of both groups. It should be noted that the study population was divided exactly in half by this criterion. Fifty percent of the sample used hormone preparations and vasoactive drugs and 50% did not. The trend for higher frequency of symptoms noted by checklist, as compared to the open-ended questionnaire holds true for both H1 and H2 groups. The further difference between the frequency of the two groups is best illustrated in Figure

Table 4

Most Frequently Reported Symptoms Reported in Hormone Group (n = 78)

| Symptom | H1[a] (n =39) O-E[c] n | % [d] | Checklist n | % [d] | H2[b] (n = 39) O-E n | % [d] | Checklist n | % [d] |
|---|---|---|---|---|---|---|---|---|
| Hot Flash | 24 | 61.5 | 35 | 89.7 | 19 | 48.7 | 33 | 84.6 |
| Changes in Menses[e] | 11 | 28.2 | -- | ---- | 23 | 59.0 | -- | ---- |
| Melancholia, Depression | 12 | 30.8 | 33 | 84.6 | 10 | 25.6 | 31 | 79.5 |
| Weakness, Fatigue | 12 | 30.8 | 32 | 82.0 | 3 | 7.7 | 28 | 71.8 |
| Nervousness | 8 | 20.5 | 32 | 82.0 | 6 | 15.4 | 28 | 71.8 |
| Skin Changes | 9 | 23.1 | 33 | 84.6 | 4 | 10.3 | 25 | 64.1 |
| Insomnia | 7 | 17.9 | 33 | 84.6 | 2 | 5.1 | 31 | 79.5 |
| Muscle, Joint Pain | 7 | 17.9 | 34 | 87.2 | 2 | 5.1 | 28 | 71.8 |
| Headaches | 5 | 12.8 | 34 | 87.2 | 4 | 10.3 | 28 | 71.8 |
| Weight Change[e] | 9 | 23.1 | -- | ---- | -- | ---- | -- | ----- |
| Heart Palpitations | 6 | 15.4 | 31 | 79.5 | 1 | 2.6 | 26 | 66.7 |
| Tingling, Numbness | 3 | 7.7 | 29 | 74.4 | 1 | 2.6 | 24 | 61.5 |
| Vertigo | 1 | 2.6 | 30 | 76.9 | -- | ---- | 21 | 53.8 |
| Sexual Appetite Decrease[e] | 6 | 15.4 | -- | ---- | 1 | 2.6 | -- | ---- |
| Painful Vagina[e] | 6 | 17.9 | -- | ---- | 1 | 2.6 | -- | ---- |

Note. [a] H1=Women who used hormone or vasoactive preparation; [b] H2=Women who used no hormone or vasoactive preparation; [c] Open-Ended; [d] Percentages are based on the n of the group; [e] Indicates symptoms not on checklist questionnaire.

4.

The frequencies across all symptoms, except changes in menses, is less in Group H2 than in Group H1. Checklist symptoms for both groups had higher frequencies than their corresponding open-ended frequencies. This is easily visualized in Figure 4. If the null hypothesis is accepted that there would be no significant difference in the way H1 and H2 groups answered these questions, the probability of 14 out of 15 symptoms falling as they do in the open-ended questions is equal to .0005. If one accepts the null hypothesis for the checklist, the probability of 11 out of 11 symptoms falling as they do above is also .0005. These probabilities were taken from a binomial table (Yamane, 1964).

Research Question Three

The third research question stated:

> Will women who are premenopausal, menopausal, and postmenopausal report the name number and kind of menopausal symptoms?

Table 5 reports the sample population in different groups. It should be noted that the entire population of this study is not included in these groups. Some questionnaires did not include the information necessary (specifically the date of the last menstrual period) to determine which menopausal group the women belonged to. Therefore, 66 women were divided into these groups based on the World Health Organization definitions (WHO, 1981).

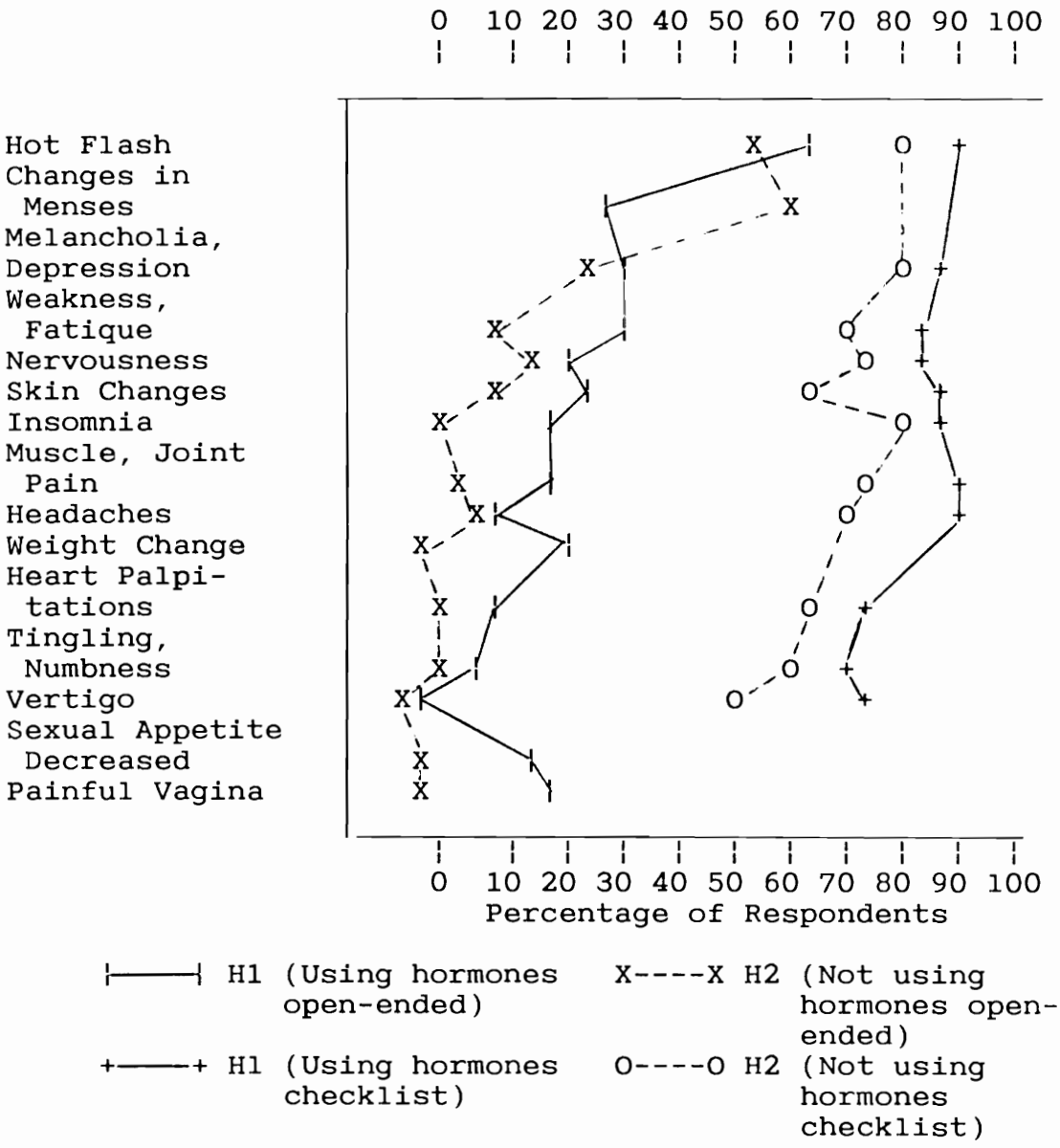



Figure 4. Most frequently reported symptoms by hormone group.

Table 5

Most Frequently Reported Symptoms in Menopause Groups (n = 66)

| | M1 (Premenopause) (n=18) | | | | M2 Menopause (n=9) | | | | M3 Postmenopause (n=39) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Open-Ended | | Checklist | | Open-Ended | | Checklist | | Open-Ended | | Checklist | |
| Symptom | n | %[a] | n | % | n | % | n | % | n | % | n | % |
| Hot Flash | 8 | 44.4 | 16 | 88.9 | 5 | 55.5 | 9 | 100.0 | 29 | 74.4 | 41 | 100.0 |
| Changes in Menses[b] | 15 | 83.3 | -- | ---- | 6 | 66.7 | -- | ---- | 10 | 25.6 | -- | ---- |
| Melancholia, Depression | 9 | 50.0 | 17 | 94.4 | 2 | 22.2 | 9 | 100.0 | 10 | 25.6 | 36 | 92.3 |
| Weakness, Fatigue | 3 | 16.7 | 14 | 77.8 | 4 | 44.4 | 9 | 100.0 | 8 | 20.5 | 35 | 89.7 |
| Nervousness | 4 | 22.2 | 15 | 83.3 | 2 | 22.2 | 8 | 88.9 | 7 | 17.9 | 36 | 92.3 |
| Skin Changes | 3 | 16.7 | 14 | 77.8 | 1 | 11.1 | 9 | 100.0 | 9 | 23.0 | 34 | 87.2 |
| Insomnia | 2 | 11.1 | 15 | 83.3 | 1 | 11.1 | 10 | 100.0 | 6 | 15.4 | 37 | 94.9 |
| Muscle, Joint Pain | 3 | 16.7 | 14 | 77.8 | 1 | 11.1 | 9 | 100.0 | 5 | 12.8 | 37 | 94.9 |
| Headaches | 6 | 33.4 | 14 | 77.8 | 1 | 11.1 | 9 | 100.0 | 2 | 5.1 | 38 | 97.4 |
| Weight Change[b] | 3 | 16.7 | -- | ---- | 1 | 11.1 | -- | ---- | 4 | 10.3 | -- | ---- |
| Heart Palpitations | 1 | 5.6 | 14 | 77.8 | 2 | 22.2 | 9 | 100.0 | 4 | 10.3 | 33 | 84.6 |
| Tingling, Numbness | 1 | 5.6 | 10 | 55.6 | 1 | 11.1 | 9 | 100.0 | 2 | 5.1 | 32 | 82.0 |
| Vertigo | -- | ---- | 12 | 66.7 | 1 | 11.1 | 7 | 77.8 | -- | ---- | 30 | 76.9 |
| Sexual Appetite Decreased[b] | 1 | 5.6 | -- | ---- | -- | ---- | -- | ---- | 6 | 15.4 | -- | ---- |
| Painful Vagina[b] | 3 | 16.7 | -- | ---- | -- | ---- | -- | ---- | 5 | 12.8 | -- | ---- |

Note. [a] Percentages based on n of group; [b] Symptoms not on checklist questionnaire.

Actual case numbers, as well as percentages for each group are included in Table 5 to ease comparisons between groups of unequal numbers. Group sizes varied. The premenopause group had 18 members, the menopause group 9 and the postmenopause group contained 39 members. Across all menopausal groups, the trend for the checklist symptoms frequencies to be greater than the corresponding open-ended frequencies continued.

Figure 5 is a graphic representation of the data presented in Table 5. It can be seen that the open-ended frequencies are less than the checklist frequencies across the board. For the open-ended frequencies, there are no real differences between the menopause groups.

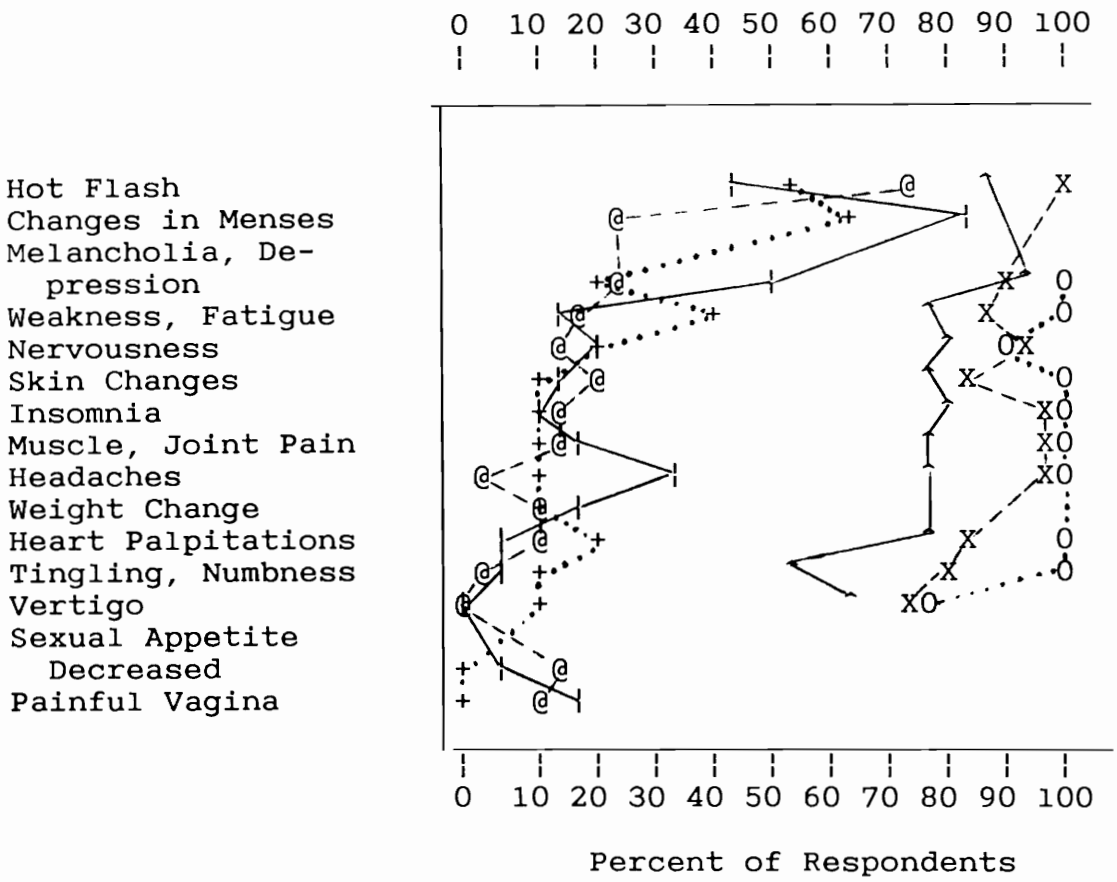
The checklist frequencies are more easily distinguished. The premenopause group has fewer responses than the menopause group. The postmenopause group had fewer positive responses than the menopause group. The menopause group had almost 100% positive responses for the checklist symptoms.

Caution must be exercised in drawing conclusions from the above observations since the number of women in each group differs widely. Only a few differing responses could shift the data significantly.

Research Question Four

The fourth research question stated:

> Will women who list the same symptom(s) in the




¦————¦ M1 (Premenopausal, open-ended)
^————^ M1 (Premenopausal, checklist)
+·····+ M2 (Menopausal, open-ended)
O·····O M2 (Menopausal, checklist)
@-------@ M3 (Postmenopausal, open-ended)
X-------X M3 (Postmenopausal, checklist)

Figure 5. Most frequently reported symptoms in menopausal groups (N = 66).

open-ended questionnaire and the checklist rate the severity of the symptom(s) equally?

The data in Figure 6 consist of paired data from the open-ended and checklist questionnaires. If the symptom was present on both questionnaires, the severities were plotted. For example, if the symptom of hot flash was found on both the open-ended and checklist questionnaires with severity ratings of 3 and 1 respectively, they were plotted on the figure as 1-X (horizontal), 3-Y (vertical). The X-axis is the severity rating for the checklist and the Y-axis is the severity rating for the open-ended questionnaire. There were a total of 847 symptoms reported from both the open-ended and checklist questionnaires. Of these, there were a total of 139 matched pair symptoms found, or 32.8% of all symptoms reported. Of these, 52% ($n$ = 72) fell on the 1:1 (null hypothesis) line which represents equally rated symptoms. More women reported equal severity when the same symptoms appeared on both parts of the questionnaires than when the symptom appeared on one list only. For those who did not (48%, $n$ = 67), the figure shows a definite trend toward answering the open-ended symptoms with a higher severity than the corresponding checklist symptoms. This is shown in the shaded area of the plot and represents 40% ($n$ = 56) of the matched pairs. Only 8% ($n$ = 11) of the matched pairs indicated a higher severity rating when answering the checklist questionnaire.

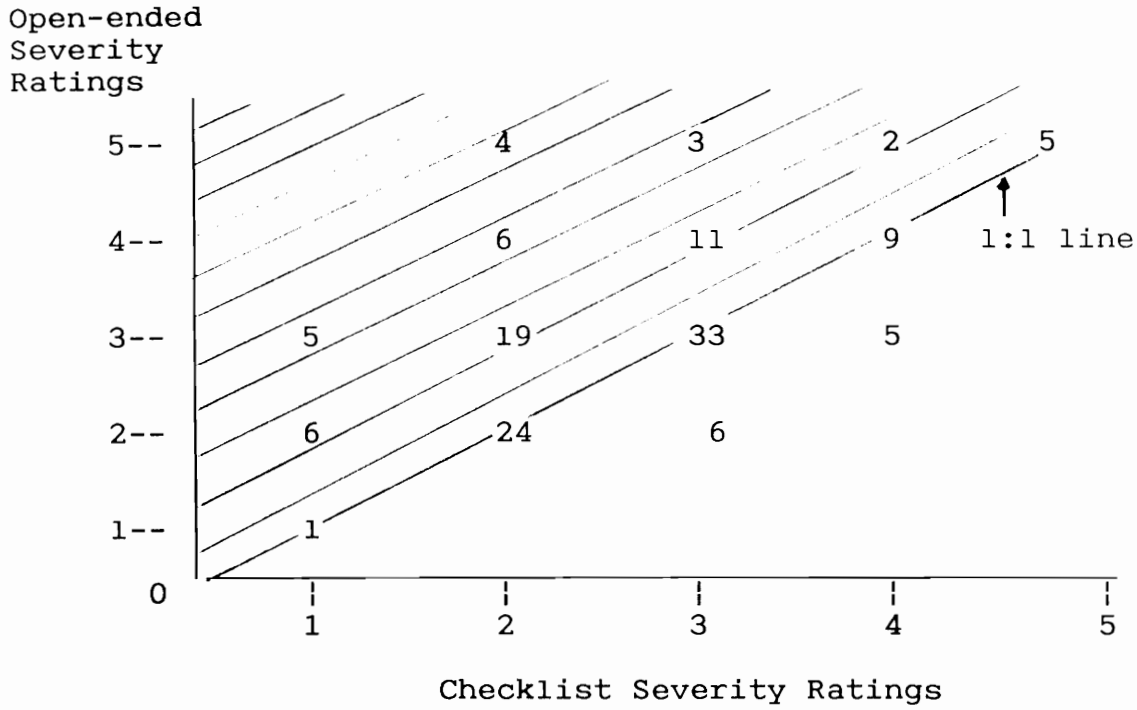



Figure 6. Severity ratings.

Another approach to this question was to consider each symptom individually when analyzing the paired data through the use of nonparametric statistics, specifically the Wilcoxon Matched-Pairs Signed-Test and the Signed-Test. Each symptom was rated individually to determine if the severity rating between the open-ended and checklist questionnaire was statistically different. A significance level of .05 was chosen. If the test indicated a rating above the .05 value, the symptom was considered not to be answered significantly differently, that is, the severity ratings for all practical purposes were the same.

Using the Wilcoxon Matched-Pairs Signed-Test, with appropriate degrees of freedom and a 2-tailed probability, the hot flash (.000), melancholia and depression (.016) and nervousness (.028) were all rated differently on the open-ended questionnaire than on the checklist. The Signed-Test produced the same results: hot flash (.000), melancholia and depression (.022), and nervousness (.031) (Table 6).

In conclusion, when the same symptoms appeared on the open-ended and checklist portion of the questionnaire, they were rated the same severity for 52% ($n$ = 67) of the matched pairs. Of those that appeared only once, 40% ($n$ = 56) of the severity ratings were rated higher on the open-ended questionnnaire than on the checklist and only 8% ($n$ = 11) of the severity ratings were rated higher on the

Table 6

Statistically Paired Symptoms

| Symptoms | No. of Pairs | Wilcoxon Matched-Pairs Signed-Text | Signed-Test |
|---|---|---|---|
| Hot Flash | 42 | .000* | .000* |
| Tingling, Numbness | 4 | 1.000 | 1.150 |
| Insomnia | 9 | .686 | 1.000 |
| Nervousness | 12 | .028* | .031* |
| Melancholia, Depression | 22 | .016* | .022* |
| Vertigo | 0 | -- | -- |
| Muscle, Joint Pain | 7 | .686 | 1.000 |
| Headaches | 9 | .201 | .625 |
| Heart Palpitations | 7 | .593 | 1.000 |
| Weakness, Fatigue | 15 | .225 | .375 |
| Skin Changes | 12 | .068 | .125 |

Note. *Indicated a significant difference at the .05 level (the null hypothesis that the question was answered the same on the open-ended and checklist questionnaire is rejected).

checklist than on the open-ended questionnaire. When each symptom was analyzed separately by use of nonparametric tests, the hot flash, melancholia and depression, and nervousness were the only symptoms with severity rankings statistically different between the open-ended and checklist questionnaires.

Research Question Five

The fifth research question stated:

> How many women have talked with their health care provider about menopause?

Seventy-eight women answered this question. Nineteen of the 78 (24.3%) stated that they had not seen a health care provider about menopause. Sixty-six (75.6%) had seen a health care provider about menopause. For those who had seen a health care provider, 55 (93.2%) women commented on their satisfaction with the care they received. Ten (18.2%) were not satisfied with their care, 31 (52.4%) were satisfied, and 14 (25.5%) were uncertain.

Table 7 displays the results for the women who provided information about the type of health care professional they saw. There were a total of 59 (75.6%) women who listed this information.

In conclusion, the majority of women in this study had seen a health care provider about menopause. Physicians were the health care provider consulted most often. Most women were satisfied with their care.

Table 7

Type of Professional Seen for Menopausal Issues (n = 59)

| Health Care Provider | n | % |
|---|---|---|
| Physician | 32 | 54.2 |
| Nurse | 5 | 8.4 |
| Physician and Nurse | 17 | 28.8 |
| Physician, Nurse and Herbalist | 2 | 3.3 |
| Other | 3 | 5.1 |

Research Question Six

Research question six stated:

> What percentage of women who consider themselves in the perimenopausal transition are taking hormone preparations or vasoactive drugs?

Thirty-nine (exactly 50%) of the women in the study were taking hormone or vasoactive preparations.

The frequency of use of these preparations varied, with some women taking more than one kind. Table 8 shows that the majority of women used estrogen preparations. Less than 18% ($n$ = 7) used vasoactive preparations for any reason. Users of progesterone drugs also accounted for less than 18% ($n$ = 7). Less than 8% used testosterone preparations.

There was no attempt by the investigator to determine the specific reason why any particular woman took a specific preparation. If the participant took any hormone or vasoactive drug, she was included in the appropriate group, regardless of the specific condition requiring such treatment.

Research Question Seven

The seventh research question stated:

> What percentage of symptoms reported on the questionnaire will women report were also experienced before the perimenopausal transition?

Thirty-three women in the study (43.0%) stated that they had had symptoms, usually associated with menopause,

Table 8

Hormone and Vasoactive Drug Users (n = 39)

| Preparation | n | % |
|---|---|---|
| Vasoactive Drugs | | |
| Cafergot | 1 | 2.6 |
| Tenormin | 1 | 2.6 |
| Wigraine | 1 | 2.6 |
| Propanolol | 3 | 7.7 |
| Lopressor | 1 | 2.6 |
| Total Vasoactive | 7 | 17.9 |
| Estrogen Preparations | | |
| Premarin 2.5 mg | 1 | 2.6 |
| Premarin 1.25 mg | 8 | 20.5 |
| Premarin .625 mg | 7 | 17.9 |
| Premarin 0.3 mg | 3 | 7.7 |
| Premarin Cream | 6 | 15.4 |
| Premarin (Unknown) | 4 | 10.3 |
| Estrogen (Unknown) | 8 | 20.5 |
| Ogen .625 mg | 2 | 5.1 |
| Estrogen Injection | 1 | 2.6 |
| Total Estrogen | 40 | 102.5 |
| Progesterone Preparations | | |
| Provera | 2 | 5.1 |
| Progesterone | 5 | 12.8 |
| Total Progesterone | 7 | 17.9 |
| Testosterone Preparations | | |
| Testosterone | 1 | 2.6 |
| Delatestyl | 1 | 2.6 |
| Depotest | 1 | 2.6 |
| Total Testosterone | 3 | 7.8 |

Note. Some women took more than one preparation and will be represented on the table more than once.

before their perimenopausal transition. Table 9 details these responses. Only those symptoms which were reported by at least 2 women are listed in the table (i.e., the list is not exhaustive).

Hot flashes, melancholia and depression, and nervousness were the most frequent symptoms that the women in this study described as having experienced before the perimenopausal transition. Each of the following symptoms reported by one respondent each, were: tingling or numbness, muscle or joint pains, skin changes, mood changes, dizziness, painful vagina, water retention, pain, vaginal discharge, cramps, and swelling of the legs. Six of the 11 symptoms which were included on the checklist questionnaire, also appear in Table 9 of the most frequent symptoms experienced in the period prior to the perimenopausal transition.

Research Question Eight

Research question eight stated:

> How much will women state the perimenopausal transition has affected their daily lives?

Women rated their overall impression of how much the perimenopausal transition had affected their daily lives on a 5-point scale. The results are presented in Figure 7. The mean score was 2.42, the mode 2.0 and the median 2.30, all falling on or near "a little change."

Table 9

Frequencies of Menopausal Symptoms Experienced Before the Perimenopausal Transition

($n$ = 76)

| Symptom | $n$ | % |
|---|---|---|
| Hot Flash | 8 | 10.3 |
| Melancholia, Depression | 8 | 10.3 |
| Nervousness | 6 | 7.7 |
| Changes in Menses | 5 | 6.4 |
| Weakness, Fatigue | 4 | 5.1 |
| Headaches | 3 | 3.8 |
| Heart Palpitations | 2 | 2.6 |
| Weight Change | 2 | 2.6 |
| Irritability | 2 | 2.6 |
| Anxiety, Stress | 2 | 2.6 |
| Breast Discomfort | 2 | 2.6 |

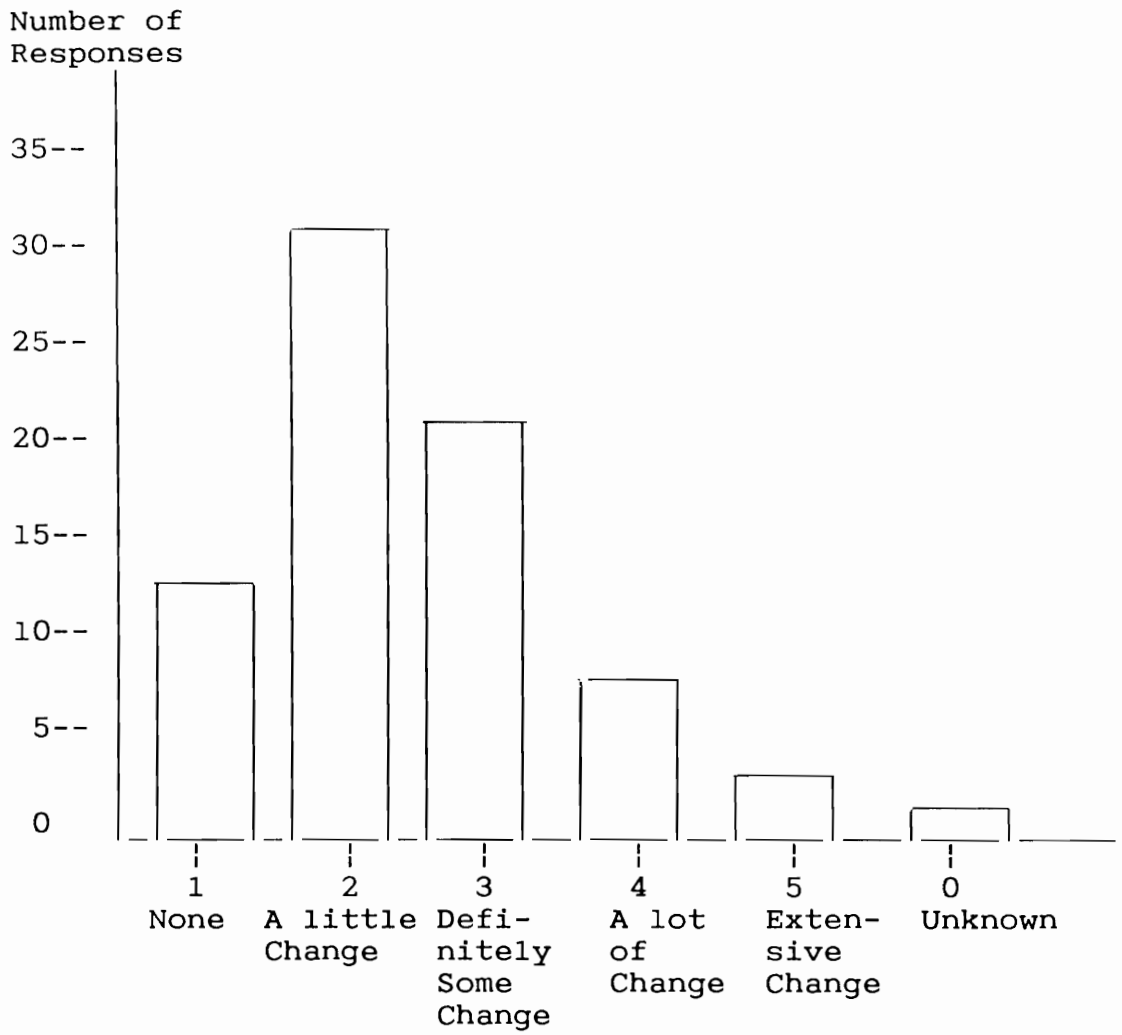



Figure 7. Self-rated effects of perimenopausal transition (n = 78).

Research Question Nine

Research question nine stated:

> Will women who have certain demographic or lifestyle traits have less severe symptoms than women with those traits?

An attempt was made to compare the women's overall rating of how much the perimenopausal transition had affected their lives, with certain demographic or lifestyle characteristics. For each variable considered, a criterion was established, based upon standards found in the review of literature. Table 10 presents these criteria.

The women were divided into the criteria presented in Table 10 by those who met the criteria and those who did not. The severity scores and the score on the 5-point scale were tallied for each group and divided by the number of cases in that particular group to give a mean severity score for each group. A student's *t*-test was performed with the appropriate degrees of freedom and a 2-tailed probability determined. These data are presented in Table 11.

It should be noted that the number of cases (*n*) for each group was different for each variable. Not all women in the study responded to each characteristic. The percentages given represent those who shared that characteristic versus those who did not.

As can be seen in Table 11, only 5 variables demonstrated statistical significance at the .05 level. These

Table 10

Selected Demographic and Lifestyle Data

| Variable | Criteria |
|---|---|
| 1. Exercise | Exercise at least 30 minutes 4 times/week |
| 2. Income | Have a family income $20,000 or above |
| 3. Gradual versus sudden menopause | All reproductive organs intact |
| 4. Adequate calcium | 24-hour recall must show at least 800 mg calcium/day |
| 5. Adequate protein | 24-hour recall must show $\geq$ 44 gm/day |
| 6. Percentage of fat acceptable | No more than 35% of the calories on 24-hour recall attributable to fat |
| 7. Calorie intake within acceptable range | 24-hour recall shows calorie intake within acceptable range for age, based on RDA |
| 8. Have seen health care provider | Has seen a health care provider regarding menopause |
| 9. Have talked with someone about menopause | Has spoken with mother, sister, other relative, or friend concerning menopause |
| 10. Above high school edution | Has attended some college |
| 11. Sexually active | Has stated she regularly participates in sexual relationship (reaches orgasm) |
| 12. Taking no hormones or vasoactive drugs | Has taken no hormones or vasoactive drugs in the last 5 years |
| 13. Premenopausal group | Has menstruated in last 12 months. |
| Menopausal group | Has had no menses in last 12 months, but LPM not more than 24 months previous |
| Postmenopausal | LPM more than 24 months previous |

Table 11

Mean Severity Scores for Women for Each Modifying Variable

| Variable | Total n | Missing Cases | Meets Criteria n | Meets Criteria % | Mean Severity | Does Not Meet Criteria n | Does Not Meet Criteria % | Mean Severity | 2-tailed Proba- |
|---|---|---|---|---|---|---|---|---|---|
| 1. Exercise | 52 | 26 | 28 | 53.8 | 2.75 | 24 | 46.2 | 1.02 | .003* |
| 2. Income | 66 | 12 | 51 | 77.3 | 2.37 | 15 | 22.7 | 2.47 | .740 |
| 3. Gradual versus sudden menopause | 67 | 11 | 31 | 46.3 | 2.71 | 36 | 53.7 | 2.14 | .012* |
| 4. Adequate calcium | 59 | 19 | 11 | 18.6 | 2.78 | 48 | 81.4 | 2.40 | .320 |
| 5. Adequate protein | 59 | 19 | 33 | 55.9 | 2.45 | 26 | 44.0 | 2.46 | .980 |
| 6. Percentage of fat in diet acceptable | 59 | 19 | 33 | 55.9 | 2.45 | 26 | 44.0 | 2.46 | .980 |
| 7. Calorie intake with acceptable range | 59 | 19 | 13 | 22.0 | 2.71 | 46 | 77.9 | 2.50 | .540 |
| 8. Have seen a health care provider | 76 | 2 | 52 | 76.0 | 2.58 | 19 | 25.0 | 1.95 | .016* |
| 9. Have talked with someone about menopause | 75 | 3 | 63 | 84.0 | 2.54 | 12 | 16.0 | 1.92 | .050* |
| 10. Above high school education | 77 | 1 | 60 | 77.9 | 2.42 | 17 | 22.1 | 2.41 | .990 |
| 11. Sexually active | 76 | 2 | 59 | 77.6 | 2.37 | 17 | 22.4 | 2.59 | .440 |
| 12. Taking no hormones or vasoactive drugs | 78 | 0 | 30 | 50.0 | 1.05 | 30 | 50.0 | 2.89 | .000* |
| 13. Premenopausal | 18 | | 18 | 27.3 | 2.29 | | | | |
| Menopausal | 9 | 12 | 9 | 13.6 | 2.91 | | | | |
| Postmenopausal | 39 | | 39 | 59.0 | 2.32 | | | | |

Note. Percentages are expressed as a percentage of the n for that variable. *Statistically significant at the .05 level.

seen a health care provider regarding the menopause, having taken hormones or vasoactive drugs and having talked with someone regarding menopause.

The mean severity scores are of interest. The mean severity scores of groups H1 and H2 fell as one might expect. Those women who did take hormones or vasoactive drugs had a higher mean severity score than those who did not. The mean severity scores for those who did not share the characteristics of the 4 significant variables (exercise, gradual versus sudden menopause, having seen a health care provider, or talked with someone about menopause) were all opposite of what might have been predicted. Those who shared the characteristics had higher mean severity scores than those who did not.

Research Question Ten

The tenth research question stated:

> What will be the reasons given by women that tell them they are in the perimenopausal transition?

Women who answered that they were in the menopause were asked why they considered themselves experiencing menopause. Sixteen (20.5%) of the women left this question blank while checking that they were in menopause. For the other 62 women, the responses were varied. Table 12 contains these data.

The most common response among those women with no answer was a question mark placed on the lines left for

Table 12

Women's Statements Concerning Why They Felt They Were in the Perimenopausal Transition (n = 78)

| Responses | n | % |
|---|---|---|
| No answer | 16 | 20.5 |
| More than 1 reason | 16 | 20.5 |
| No periods | 15 | 19.2 |
| Surgery | 12 | 15.4 |
| Symptoms, in general | 8 | 10.3 |
| Hot flashes | 5 | 6.4 |
| Taking hormones | 3 | 3.8 |
| Stress | 2 | 2.6 |
| Depression and mood swings | 1 | 1.3 |

this answer. The same number who did not answer this question provided more than one reason. These data are delineated in Table 13.

Among the single responses, no periods or menses was the most common symptom with 15 (19.2%) of the women in this group. Twelve (15.4%) women stated that after surgery they knew they were experiencing menopause. Other symptoms are presented in Table 13.

The most popular response to this question was the combination of hot flash and no periods. The remainder of the responses were individualistic in nature.

In conclusion, the data from this study, both from the open-ended and checklist portions of the questionnaire, were unique in many aspects. However, the results supported the findings from previous studies that many of the most common symptoms women report in the perimenopausal transition were listed on the original BMI. Caution must be exercised in generalizing these observations to the entire population in the Boise Greater Metropolitan Arae or other parts of the state or country because this was a convenience sample with unique characteristics.

Table 13

Women Who Had Multiple Reasons Why They Felt They Were in the Perimenopausal Transition ($n$ = 16)

| Total Cases | Symptoms or Reasons |
|---|---|
| 6 | Hot flashes and no periods |
| 2 | No periods and complete hysterectomy |
| 1 | Hot flashes and mood swings |
| 1 | Hot flashes, no menses, and sleeping problems |
| 1 | Hot flashes, night sweats, age, headaches and mood swings |
| 1 | Menstrual irregularities and given hormones |
| 1 | Age and surgery |
| 1 | Symptoms in general and complete hysterectomy |
| 1 | Ovaries removed and skin changes |
| 1 | No periods, growing a beard and mood swings |

# CHAPTER IV

## DISCUSSION OF FINDINGS

This study explored the ways that women in a non-clinical setting described their symptoms of menopause. The study was based on a framework of the perimenopausal period as one transition in women's lives. This is a complex process involving psychological, physiological, developmental/aging, and cultural issues. The relationships between these issues are unclear as was evidenced in the review of literature. The study was intended to add to the body of knowledge about how this important period affects women's lives rather than to test a tool or technique of research.

The research questions were answered in Chapter III. This chapter evaluates and interprets those results. It should be restated that the sample was unique in many ways and the findings cannot be applied to any other population. The investigator's choice of women's clubs as a source of women in the perimenopausal period is the most likely source of the unique nature of the sample. It appears that women who are members of women's clubs in Boise, Idaho generally come from higher income and

educational levels than are found in the general population of that area.

The age range of the women in the sample was consistent with that found in previous studies (Blatt et al., 1953; Delaplaine et al., 1952; Flint & Garcia, 1979; Jaszman et al., 1969; Moore, 1981; Neugarten & Kraines, 1965; Sharma & Saxena, 1981; Thompson et al., 1973; Walfisch et al., 1984). The age distribution of 37 to 72 was also consistent with the findings of Gray (1976). That is, the number of women reaching menopause is greater at the lower end of the age range than at the higher end. Hence, the distribution was negatively skewed and the use of a mean alone is inappropriate; the median must always be included. The use of nonparametric statistics was appropriate in this study.

The symptoms reported were not unlike the symptoms reported in other investigations. Of the 13 most common symptoms of the perimenopausal transition that women reported in this study, 11 were used on the 1953 Blatt Menopausal Index (Blatt et al., 1953). Only changes in menses and weight change were new in this study. It should be noted that 5 of the 6 most frequent symptoms on the open-ended questionnaire were also listed on the BMI (Blatt et al., 1953; Delaplaine et al., 1952; Flint & Garcia, 1979; Jaszman et al., 1969; Kupperman et al., 1952; Moore, 1981; Neugarten & Kraines, 1965; Sharma &

Saxena, 1981; Thompson et al., 1973; Walfisch et al., 1984). Further, these results are consistent with those of other researchers. The one exception was changes in menses. The content validity of the BMI is thus supported by the results of this study. Construct validity, always a difficult measure to define, was one of the aspects of research about menopause that was of interest to this investigator. This study demonstrated that an open-ended questionnaire, as opposed to a checklist of symptoms, yielded very different results without regard to whether the women were divided into groups or left as a whole. What was measured? When an open-ended question is asked, does the answer reflect the respondent's true impressions of her symptoms in perimenopause? If so, what do the more numerous symptoms reported by the same women in the checklist represent?

This study was not designed to answer questions related to construct validity. It became an issue once the data were examined. There was no reason to assume that the same answers that appeared on an open-ended questionnaire would appear on the checklist questionnaire. The data, however, confirmed that throughout all groups (hormone groups, menopause groups and the same as a whole), more symptoms were acknowledged on the checklist than in open-ended questions, perhaps because of the stimulus presented. Further research is needed to

determine the reasons for this discrepancy. Until this issue is resolved, the question of construct validity will remain in relation to checklist questionnaires of symptoms of the menopause.

Reliability of an instrument has not always been addressed in studies. It must be restated that this study was not one to test an instrument or a technique, but to describe the phenomena of the perimenopausal transition as experienced by women in a nonclinical setting. The BMI (Blatt et al., 1953) was adapted in the checklist portion of the questionnaire and the results confirmed that of previous studies (i.e., most of the more-frequently reported symptoms of the menopause) were contained in the index. This study does support the reliability of the index.

A significant finding of the study was that the frequencies of symptoms reported divided the women using hormones and vasoactive drugs (H1) from those who did not use those substances (H2). Figure 3 demonstrates that in both the checklist and open-ended questions, the two groups did not cross over each other except in the changes in menses of the H2 (women who did not use hormones) group. The probability of this occurring was $p < .0005$, from a binomial table (Yamane, 1964). The investigator was not able to determine the precise timing of the use of hormones. At what point did women in the H1 group begin

taking hormones? How severe were their symptoms? Did any of the women take hormones before physical symptoms were evident? As is often the case in research, analysis often leads to additional questions. Because the H2 group had more members in the premenopausal group than did the H1 group, the increase in frequency in changes in menses was not too unusual. The premenopausal women are experiencing menstrual changes. The postmenopausal group experienced their last menstrual bleeding over 2 years before the study. It was not surprising that this latter group did not list changes in menses as frequently as the premenopausal group.

It appears from this study that the group of women who used hormones or vasoactive drugs were those who reported a greater severity of symptoms. The mean severity ratings for the hormone or vasoactive drug users (H1) was 2.89, while the nonhormone users had a mean severity rating of 1.95. Women in the H1 group also reported more severe symptoms. The data support today's accepted medical practice of prescribing hormones only for those women who have severe or numerous symptoms. This has not always been the practice, however. The review of literature documents times when all women in the perimenopausal period were given supplemental hormones. Current medical thought is that the risks of taking supplemental hormones must be weighed against the advantages (Thompson

et al., 1973).

It appears that women who used hormones or vasoactive drugs in this study met the criterion of having numerous or more severe symptoms. That this group (H1) reported more severe and more numerous symptoms while taking these chemicals is also of interest. It cannot be determined from the questionnaires how the women interpreted the questions as to whether they should list all the symptoms they had ever experienced during the menopause or just those they were currently experiencing. This would need to be clarified in a follow-up study.

Women were not consistent in listing the same symptoms in both parts of the questionnaire. More symptoms were listed on the checklist than in the open-ended questions. The reasons for this are not clear, but it is likely that the symptoms on the list reminded women of symptoms they had experienced before, but were not currently experiencing. It is only conjecture, however, because women were not asked to give reasons for the discrepancies. Only 32.8% ($n$ = 139) of all symptoms were listed in both sections.

Fifty-two percent ($n$ = 72) of the women who listed the same symptoms in both sections of the questionnaire rated the severity of the symptoms the same. Those women who reported dissimilar symptoms also reported higher severity in the open-ended questions than on the check-

list. Did women who listed a symptom in the open-ended questionnaire feel that the symptom was severe, while those women who checked a symptom on a checklist did so even if the symptom was not severe? To answer these questions, a qualitative study would need to be designed to determine the women's perceptions through more intensive interviews.

When paired symptoms were examined symptom by symptom, only 3 had any statistical differences in severity ratings between Parts I and II of the questionnaire. These were hot flash, melancholia and depression and nervousness. As these are among the most common symptoms, it is not surprising that they vary more than those reported by very few respondents.

These 3 symptoms also appeared on the most frequent list of most researchers (Blatt et al., 1953; Delaplaine et al., 1952; Flint & Garcia, 1979; Jaszman et al., 1969; Kupperman et al., 1952; Moore, 1981; Neugarten & Kraines, 1965; Sharma & Saxena, 1981; Thompson et al., 1973; Walfisch, 1984). With the exception of hot flash, these findings also correspond to those of Frey (1981) who described tired feelings as the most frequent symptoms of the perimenopausal period, followed by feeling blue or depressed. It is of interest that these 3 symptoms were also those that women reported that they had experienced most often before menopause. No explanation is offered

for these observations. Additional research is needed to uncover the etiology of these symptoms, and their uniqueness to the reproductive period in a woman's life.

The data that most surprised the investigator were those which described the modifying factors of the perimenopausal period. Conceptually, there were several factors that might influence how a woman may perceive her experience with menopause. Those factors included many habits that are felt to have an impact on general health, such as exercise, adequate nutrition, sexual activity, the gradual or sudden entrance into the perimenopausal period, and taking hormones or vasoactive drugs. Also considered were certain demographic qualities, namely, income and education. Seeing a health care provider about the menopause was also included. Each woman was placed in a group that either met the minimal standard for that factor or did not.

The mean severity scores for both those who did, and those who did not meet the criteria for each factor were statistically different for 5 of the modifying factors including exercise, having seen a health care provider, gradual or sudden menopause, having talked with someone about the menopause and having taken hormones or vasoactive drugs. Only the hormone groups had mean severity scores related to those factors that fell as expected. In this group, those women who took no hormones had smaller

mean severity scores than did those who took hormones. Because hormones are given to modify severe menopausal symptoms, it appeared logical that the scores fell as they did, provided the hormones were prescribed to relieve symptoms.

On the other hand, the other 4 significant factors had mean severity scores that fell the opposite way. Those women who had not seen a health care provider or talked with a mother, sister, relative or friend about menopause had lower mean severity scores than those who had done so. This might be explained by the fact that those having a more disruptive time in the menopause would seek both professional and other advice to help them cope with their experiences.

The last 2 significant factors are more difficult to interpret. Those women who did not exercise the recommended amount of time had lower mean severity scores than those who did exercise. Those who had part of their reproductive organs removed and were felt to have had a sudden entrance into the menopause had a lower mean severity score than those who may have entered the perimenopausal transition more gradually. One could not conclude that removal of the reproductive organs and avoidance of exercise would lessen the discomfort of the perimenopausal transition. A cause and effect relationship is not implied here. The data were checked re-

peatedly to ascertain if an error in coding or data analysis had occurred. It had not. Among the logical explanations is that this was a small sample size with unique characteristics and that unknown factors do have an impact on these variables. Perhaps the women who exercise do so in an attempt to improve overall health to assist them in coping with a difficult perimenopausal transition. Some authors have suggested that women who have more adipose tissue than normal have less severe symptoms (Reitz, 1977). More women who had had their reproductive organs removed were taking hormones than were not. This could account for the lower mean severity scores. The women were not asked about the length of taking hormones. Time may have been a confounding variable influencing perception of symptom severity.

When women were asked to rate their overall impressions of how much they felt the perimenopausal transition had affected their lives on a 5-point scale, the majority stated they had experienced from very little change to definitely some change. Few selected the choices of no change, a lot of change, extensive change or unknown. This was consistent with the findings of Frey (1981) whose sample also showed very little effect upon women's lives of the perimenopausal transition.

The response to the question, "Why do you feel you are in the menopause?" was varied. Over 20% of the women

left the question blank. About 20% gave the operational definition of no menses, less than 20% traced their menopause to surgery, and 20% gave more than one reason. Even smaller percentages responded with general symptoms, hot flashes, or hot flashes and no periods. There were many other individualized responses. This led the investigator to conclude that among this group of women, there was no universal single factor definition of menopause.

In conclusion, the majority of the data in this study were in consensus with that described by previous researchers in this area. One area of new information was the marked difference in symptom reporting between an open-ended questionnaire and a checklist of symptoms. This is probably one effect of the technique. However, the distinct differences between the hormone and vasoactive drug users and those who did not use these chemicals was marked. Further, the need for continued research to discern the factors which modify the menopause was also demonstrated. The drawbacks of previous studies were repeated in this study with regard to use of a checklist. The question of whether a checklist of symptoms suggests symptoms to women who may not otherwise have complained of them also warrants further study.

# CHAPTER V

## SUMMARY AND IMPLICATIONS FOR NURSING

This study was a cross-sectional descriptive investigation designed to investigate and describe the symptoms reported by women in the perimenopausal transition. The majority of the women in the study filled out the questionnaire at a meeting of their women's club to which the investigator was invited. Seventy-eight of the 205 women who filled out the questionnaire stated that they were experiencing menopause, and thus qualified for inclusion in the data analysis of the study.

The women filled out a 2-part questionnaire concerning their experiences with menopause. The first part of the questionnaire contained an open-ended question asking them to list any symptoms they might have had that they attributed to menopause. This part of the questionnaire was collected, and then a second portion was distributed that contained a checklist of menopausal symptoms which had been adapted from the BMI (Blatt et al., 1953). Women were asked to rate the severity of their symptoms on both parts of the questionnaire. A follow-up phone call was

made to a majority of women in the study so that they could respond to questions regarding nutrition inadvertently left off their questionnaires.

It was not known what effect this omission had on the study. These questions were presented orally rather than in written form which might have affected the way the women answered the questions. Not all women in the study were presented the opportunity to answer this question because all were not traceable via the telephone. Once the data were collected, they were coded and analyzed. The number of different symptoms listed in the open-ended questions was 45. These 45 symptoms reported in the first part of the questionnaire included those listed on the checklist. In fact, after analysis, the 6 most frequent symptoms on the open-ended questions were found on the checklist portion of the questionnaire, as well.

Another finding of the study was that there was a wide divergence between how the women answered the open-ended questions and how they replied to the checklist. This was evident both in number of symptoms (greater on the checklist) and severity of symptoms. It was also noted that the women who used hormones or vasoactive drugs were differentiated from those who did not. The number of symptoms reported was higher for those who used hormones or vasoactive drugs. Women who used hormones or vasoactive drugs also rated their symptoms as more severe.

Demographic data and other descriptive factors were used to compare various lifestyle practices with women's perception of the impact the perimenopausal transition had on their lives. In general, it was found that lifestyle traits did not affect the women's perceptions of menopause.

## Suggestions for Future Nursing Research

There continues to be a need for further research with women in the perimenopausal transition. The sample of this study was unique in income and educational levels. A broader base of women in a nonclinical population would be desirable.

It would also be beneficial to design a qualitative study to determine perceptions from women about the perimenopausal phenomena. After reading all the questionnaires, it was evident that women often interpreted the same question differently. This was also apparent during data collection. Although every attempt had been made when designing the questionnaire to word the questions clearly, there was some confusion, or at least difference of opinion, on some questions. A good example might be the question that asked for the date of the last menstrual period. At one club, 2 women engaged in a very vocal discussion of whether the question asked for the last normal menses or just the last period. They deferred to

the investigator for clarification. There was agreement from other women present that some had believed the question meant the last normal period, while others interpreted the question to mean the last bleeding of any kind. Question interpretation, combined with the women's inability to clearly recall certain events, could bring any results of the study into question. A longitudinal study of women in the perimenopausal transition would eliminate some of these concerns.

It was shown that the women in the study did not have a universally-understood definition of menopause. This was a segment of more highly-educated women than the general population. There may be even more confusion among women with less formal education. More interaction with the investigator may prove to be beneficial in order to help women give a name to their experience, and thus facilitate adjustment to the transition.

Among the variables to include in a future study would be marital status and parity. This investigator would recommend that some physical measurements including height, weight and pap smear be done in order to correlate physical characteristics with reported symptoms, severities and experiences. Specific methods that women use to cope with their symptoms would be an interesting avenue of research. A comparison of vaginal smears with reported severity of symptoms would be useful because both an

objective and subjective view of the problem would provide a more complete picture.

This investigator would recommend a pretest/posttest design. A researcher might use a questionnaire similar to that employed in this study and ask the women to answer the questions; then give a presentation where the perimenopausal transition is explained and conceptualized for the group; then repeat the questionnaire as a posttest at a later date. This design was suggested to the investigator by the comments of many women in this study. After the presentation had been given, many women asked for their questionnaires back because they wanted to change, add or delete answers; however, the questionnaires were not returned to the women.

This study dealt predominantly with symptoms of the perimenopausal transition. Another approach would be to ask women to describe what the "change of life," menopause, or perimenopausal transition meant to them, without any reference to symptoms. Would all women in this culture define menopause in symptom terms?

In conclusion, there are variables that need to be included in future studies. There are other approaches, other methods of research in this field. Because there is no comprehensive theory developed in this area, there is opportunity for much factor-identifying research. Nurses, as health care providers, as health educators and many as

women themselves, are certainly in a unique position to contribute to the body of knowledge in this area.

Using the goal-directed model of Dickoff and James (1968), this study could be labeled a participant at the factor-isolating level of theory. That is, if the goal of an investigator were to determine what is normal during this period of most women's lives, this study would add yet another piece of information to that which must be gathered in order to move to the factor-relating level. The investigator believes that this study was a pilot test of ways in which to ask women experiencing this phase of their lives to describe the factors they feel are important. More research needs to be done directed toward the goal of describing the perimenopausal experience for a wide range of women.

## Implications for Nursing Practice

Nurse researchers, as well as practicing nurses, should always be aware that the way one asks a question greatly influences the amount and kind of information that is obtained. The differences in number of symptoms listed in open-ended questions versus the number of symptoms listed in a checklist is an excellent example of this principle.

This study added to the body of knowledge about menopause while highlighting the many different ways women

view this important transitional period in their lives. It has long been accepted that health care teaching is within the scope of the practice of nursing. It would appear that health care teaching in this population has been less than optimum. New programs could be established to meet this need. Not only community-based nurses should be involved in this effort, but those nurses working in schools and public institutions should be active participants. Acute care nurses would also need to incorporate important health care instructions in their interactions with women who are in this period of their lives.

Roy (1976) stated that one of the universal needs of man (or woman in this case) is the need to know what is normal. In the review of literature, the investigator found no study claiming to delineate what was a normal experience for women in menopause. Many women who participated in this study thanked the investigator for the opportunity to talk with some knowledgeable person about menopause. In fact, for the researcher, almost as much information was obtained from talking informally with the subjects after the data collection than from the questionnaire itself. It is very difficult to quantify the amount and type of information gleaned in this manner. In general, it was apparent that women were not aware of what they might expect, physically or emotionally, during this important time of their lives. This lack of informa-

tion did add to the general uneasy feeling the women reported they felt during this period.

The state of knowledge about this transitional period is still in its early beginnings. One of the goals of nursing might be to add to the body of knowledge regarding the normal range of experiences that occur in the perimenopausal transition.

More information is needed before true theory can be established. Until this occurs, nurses cannot ignore the needs women have to talk with someone about their experiences at this time. Nurses can use the information gathered from this and other studies to aid their clients in understanding what other women have described as their experiences in the perimenopause. As nurses have historically taught young women about needs and experiences at menarche, nurses cannot ignore the opposite end of the reproductive periods of women's lives.

# APPENDIX A

## LETTER TO CLUBS OR GROUPS

7219 Swift Lane
Boise, Idaho 83704

Club Name
Club Address

Dear Madame President:

I am a graduate nursing student from the University of Utah. I am completing a thesis in the women's health field of the menopause. This thesis involves research in the Boise area. I need to contact as many women as possible between the ages of 40 and 55 inclusive to answer a questionnaire about their experiences during menopause.

If your membership includes this age group and you feel they would be interested in participating, I would be anxious to hear from you.

I am proposing, if convenient, to come to a meeting of your group, explain my project and administer a questionnaire that will take from 20 to 30 minutes to complete. After administration of the questionnaire, I will be available to answer questions about the questionnaire, my project and menopause in general. I would be glad to do a 45-minute presentation on menopause if that would meet your needs.

I feel that the data from this study will add to what is already known about this important period in every woman's life. Each participant, it is hoped, will gain some insight or knowledge about menopuase from her participation in this study.

I would appreciate hearing from you as soon as possible, as I need to adhere to a strict schedule to complete this project as planned.

Sincerely,

Lisa F. Engleman, R.N.

# APPENDIX B

# QUESTIONNAIRES

No. _____

Data Sheets: Part 1

1. Birthdate _____

2. What is your racial/ethnic background?

_____ White
_____ Black
_____ Spanish-American
_____ Native American
_____ Other (Specify): _____

3. What is the highest level of your education?

_____ Less than 7th Grade
_____ Junior High School (9th Grade)
_____ Partial High School (10th or 11th Grade)
_____ High School Graduate
_____ Partial College (at least 1 year) or Specialized Training
_____ Standard College or University Graduation
_____ Graduate Professional Training (Graduate Degree)

4. Have you used oral contraceptives (the pill) in the last 5 years? If so, give name, number of months used and year(s) used. Example -- Ovral, 36 months, 1981-1982.

| Contraceptive | Length Used | Year(s) Used |
|---|---|---|
| | | |
| | | |
| | | |

_____ I have not used contractives in the last 5 years

5. Estrogen, progesterone, or other hormone preparations used in the last 5 years. Length used (month or years). Please list dosage if known. Example -- Premarin Cream, 2 years, 1 applicator full each day.

| Hormone | Length Used | Dosage (if known) |
|---|---|---|
| | | |
| | | |
| | | |

_____ I have used no hormone preparations in the last 5 years.

6. Date of last menstrual period. If possible, list:

   Day _____ Month_____ Year_____

7. Do you consider yourself in the menopause?

   Yes _____ No _____ Unsure _____

   If Yes, why?_____
   _____
   _____
   _____

8. Please list the first menopausal change you experienced:

   _____

   What month and/or year did you experience this change (date):

   _____

   _____ I have experienced no menopausal change.

PLEASE CONTINUE TO THE NEXT PAGE

9. (a) Please list all changes (if any) you attribute to the menopause in the numbered column to the left and (b) mark an "X" opposite each change in the scale column to indicate the severity of each change -- how much it interfered with your daily life (be sure to include the change you mentioned in question 8):

| Change | Scale | | | | |
|---|---|---|---|---|---|
| | None | Mild | Medium | Severe | Extremely Disruptive |
| (a) | | | | | |
| (b) | | | | | |
| (c) | | | | | |
| (d) | | | | | |
| (e) | | | | | |
| (f) | | | | | |
| (g) | | | | | |
| (h) | | | | | |
| (i) | | | | | |
| (j) | | | | | |
| (k) | | | | | |
| (l) | | | | | |

_____ I have experienced no menopausal change.

10. Of all changes listed in question 9, which changes did you experience to any degree before menopause?

(a)_____ (b)_____
(c)_____ (d)_____
(e)_____ (f)_____
(g)_____ (h)_____
(i)_____ (j)_____

11. How many times have you obtained health care consultation for the above symptoms?

_____ times

12. Have you talked with your mother, sister, relative, or friend(s) about menstruation?

_____ Yes _____ No

13. Have you talked with your mother, sister, relative, or friend(s) about menopause?

_____ Yes _____ No

14. Have you talked with a health care professional about menstruation?

_____ Yes _____ No

15. Have you talked with a health care professional about menopause?

_____ Yes _____ No

If yes, indicate the health care professional (check all that apply):

_____ Physician
_____ Nurse
_____ Chiropractor
_____ Other

16. If you sought help from a health care professional, were you satisfied with the information or services received?

_____ Yes _____ No _____ Unsure

17. Are you seeing a health care professional for any chronic condition(s)?

_____ Yes _____ No

If Yes, please list that (those) condition(s):

_____

_____

_____

18. List any medication(s) and the dosage -- including vitamins, minerals, and pain relievers (example: aspirin, 2 tablets per day), prescription and nonprescription drugs or additives (example: wheat germ -- 1 tsp. per day, bee pollen -- one capsule every day) you are currently taking:

| Medication | Dosage | Medication | Dosage |
|---|---|---|---|
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

19. Please list any exercise you regularly do and number of days per week and hours per day you engage in the exercise(s):

Exercise _____ Exercise _____

Days/week _____ Days/week_____

Minutes/day _____ Minutes/day_____

20. Do you regularly participate in a sexual relationship at this time (reach orgasm regularly)?

Yes_____ No _____

21. Please place an "X" on the scale below describing how much you feel the perimenopausal transition has affected your daily life:

| 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|
| None | A little change | Definitely some change | A lot of change | Extensive change |

* * * * * * * * * * * * *

Thank you! Please return this part of the questionniare to the investigator.

No. _____

Data Sheet -- Part II[1]

Age Today _____

1. Please check any of the symptoms you are now experiencing below, and indicate on the scale following each, the severity of the symptom(s). Severity may be defined as how much the symptom interferes with your daily life.

| Change | Scale | | | | |
|---|---|---|---|---|---|
| | None | Mild | Medium | Severe | Extremely Disruptive |
| (a) Hot Flashes | | | | | |
| (b) Tingling or Numbness in Arms or Legs | | | | | |
| (c) Insomnia | | | | | |
| (d) Nervousness | | | | | |
| (e) Melancholia (depressed feelings) | | | | | |
| (f) Vertigo | | | | | |
| (g) Muscle or Joint Pain | | | | | |
| (h) Headaches | | | | | |
| (i) Heart Palpitations | | | | | |
| (j) Weakness or Fatigue | | | | | |
| (k) Skin Changes | | | | | |

_____ I have experienced no symptoms.

[1] Categories adapted from Blatt et al., 1953.

2. Which of the symptoms listed below did you experience before menopause (check only the ones you did experience):

_____ (a) Hot Flashes

_____ (b) Tingling or Numbness in Arms or Legs

_____ (c) Insomnia

_____ (d) Nervouness

_____ (e) Melancholia (depressed feelings)

_____ (f) Vertigo

_____ (g) Muscle or Joint Pain

_____ (h) Headaches

_____ (i) Heart Palpitations

_____ (j) Weakness or Fatigue

_____ (k) Skin Changes

3. Other symptoms not listed in question 1 may be listed here and scaled as above.

| Change | Scale | | | | |
|---|---|---|---|---|---|
| | None | Mild | Medium | Severe | Extremely Disruptive |
| _____ | _____ | _____ | _____ | _____ | _____ |
| (a)_____ | _____ | _____ | _____ | _____ | _____ |
| (b)_____ | _____ | _____ | _____ | _____ | _____ |
| (c)_____ | _____ | _____ | _____ | _____ | _____ |
| (d)_____ | _____ | _____ | _____ | _____ | _____ |

_____ I am having no (other) symptoms.

4. What is your annual family income from all sources?

_____ (a) Below $10,000

_____ (b) $10,000 - $19,999

_____ (c) $20,000 - $29,999

_____ (d) $30,000 - $39,999

_____ (e) $40,000 - $49,999

_____ (f) $50,000 - $59,999

_____ (g) $60,000 - $69,999

_____ (h) $70,000 or more

5. How many years have you had menopausal changes?
_____ years.

_____ I have had no changes

6. Have you ever had part of your reproductive organs removed?

Yes_____ No_____ Unsure_____

If yes, please check below the appropriate boxes:

_____ Uterus
_____ Tube(s)
_____ Ovary(ies)
_____ Do not know

* * * * * * * * *

Thank you very much!! Your participation is well appreciated. Please return Part II to the investigator.

7. What did you eat yesterday?

**Breakfast**

_____

_____

**Lunch**

_____

_____

**Dinner**

_____

_____

Was this a typical day for you? _____ Yes _____ No

8. Where do you usually eat?

_____ At home most of the time

_____ Out most of the time

_____ Eat out as much as eat at home

* * * * * * * * * * *

Thank you very much!! Your participation is appreciated. Please return Part II to the investigator.

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